STUDY OF CIVIL WORKS

No. 82-16

HEARINGS

BEFORE THE

SUBCOMMITTEE TO STUDY CIVIL WORKS

OF THE

COMMITTEE ON PUBLIC WORKS
HOUSE OF REPRESENTATIVES

EIGHTY-SECOND CONGRESS

SECOND SESSION

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STUDY OF CIVIL WORKS

TUESDAY, APRIL 22, 1952

COMMITTEE ON PUBLIC WORKS,
SPECIAL SUBCOMMITTEE TO STUDY CIVIL WORKS,
Washington, D. C.

The special subcommittee met, pursuant to adjournment, at 10:05 a. m., in room 1302, New House Office Building, Hon. Robert E. Jones, Jr., presiding.

Charles D. Curran, staff director.

Mr. JONES. The committee will come to order.

Today we have scheduled the Department of Agriculture. Speaking for the Department will be the Secretary.

Mr. Brannan, will you come around?

Mr. Secretary, we are delighted to have you and especially have you comment on the problems of flood control, the water management program, land protection and soil conservation.

STATEMENT OF CHARLES F. BRANNAN, SECRETARY OF AGRICULTURE, ACCOMPANIED BY. J. C. DYKES, SOIL CONSERVATION SERVICE; AND CARL BROWN, SOIL CONSERVATION SERVICE, DEPARTMENT OF AGRICULTURE

Secretary BRANNAN. Mr. Chairman, I appreciate the opportunity to appear before this committee. We do not always have the opportunity to bring our problems before this committee. Realizing that this may be one of those few chances I am going to take this opportunity of covering the territory pretty thoroughly and pretty adequately, at least from our point of view.

I should like also to say, Mr. Chairman, that Dr. Salter, the Chief of the Soil Conservation Service, and Mr. Gus Giessler, the Chief of the Production and Marketing Administration, and Dr. Leslie Harper, who is here for Mr. Watts of the Forest Service, and some of the other members of the Department's staff are present today, so that they may supplement any information which I may give the committee today.

We also have in from the field at this particular time, and they have come up to serve the committee if they can be of service, Mr. Gladwin Young, who is in charge of our regional or area work in the Missouri Basin for flood control, flood prevention, and soil conservation activities as they are intradepartmental, and Mr. Herbert Peet, who performs that same function in the Columbia River Basin. We also, as you will observe, Mr. Chairman, have some maps and plats here, and some of the folks who know them in great detail and are prepared

to present them if and when the committee thinks it is desirable to have it.

Speaking for the whole Department of Agriculture, I want to thank this subcommittee for giving us the opportunity to present our views concerning the nature, objectives and relationships of the Department's watershed programs.

The Department has an important interest and responsibility in the field of land and water resources. This is true not only with respect to the watershed improvement activities for which we are directly responsible, but also with respect to the impact on agriculture of projects constructed by other agencies on the main streams of the rivers, particularly as these projects affect the Department's task in the area of food, feed and fiber production.

I should like to begin my statement by calling attention to the basic purposes and essential nature of the land and water resource development programs which are the subject of these hearings. I am sure we would all agree that their ultimate objective is the efficient use of the Nation's land and water resources for sustained output of goods and services to meet the present and future needs of all our people.

The total program of land and water development, use, and conservation for all of the drainage basins of the country involves activities and measures on a broad front. It includes a cooperative arrangement for sharing responsibility for the installation of these measures, as well as for their costs. Non-Federal interests, including individuals, organizations, and local and State governments, as well as the Federal Government, are involved. In short, while the installation and financing of public works by the Federal Government is an important phase of the program, it by no means constitutes the total activity, and certainly it is not in itself the ultimate objective.

Since the ultimate objective of the total program is efficient use of land and water resources for sustained output of goods and services, the Department of Agriculture clearly has large responsibilities in various aspects of the program.

The Department is carrying out Nation-wide programs for soil and water conservation, forest and range protection and management, and related activities under a series of legislative authorizations dating back to the last century. The concept that good watershed management will have a beneficial effect in regulating streamflow and preventing flood damages is not new. It is embodied in various pieces of basic legislation under which the Department operated long before enactment of the Flood Control Acts of 1936 and subsequent years.

As you know, the flood control acts provide that Federal investigations of watersheds and measures for runoff and waterflow retardation and soil-erosion prevention on watersheds shall be under the jurisdiction of, and shall be prosecuted by, the Department of Agriculture, under the direction of the Secretary.

This responsibility under the flood control acts is over and above other responsibilities of the Department for soil conservation, forest protection and management, and agricultural production on a national basis. It is directed primarily toward: (*a*) the prevention and reduction of damages caused by erosion, floodwaters and sediment on the watershed lands of specific stream basins above mainstream protection and control works; and (*b*) the reduction of the amounts of sediment deposited in river channels, harbors, and main-stream reservoirs.

The action of the Congress was based largely on the belief, held by many Members of both the House and Senate, that in developing a sound national flood-control program it was essential to retain rainfall on watershed lands to the extent feasible through watershed improvement measures. These members were convinced that flood-control projects previously undertaken by the Federal Government were deficient because they did not attempt to prevent formation of floods by holding more rainfall on watershed lands, but sought only to control floods after they had begun and after the floodwaters had reached the main streams. Obviously, therefore, the Congress, in enacting the flood-control act, intended that the improvement of watersheds by the Department of Agriculture for runoff and waterflow retardation and soil erosion prevention should complement and support the improvement of rivers and other waterways by the Department of the Army for flood-control purposes. It recognized further that the functions and duties imposed on both Departments would have to be fully discharged in order to achieve the expanded objectives of the new national flood-control policy.

The broad scope of the watershed improvement programs (consisting of both vegetative and physical structural measures as provided in the Department's watershed reports) which Congress intended the Department to carry out under the Flood Control Act is clearly reflected in the legislative history of the act.

The factors involved, namely, watershed lands and the water that falls on them; and the measures involved, that help to increase the rates and amounts of infiltration of water into the soil and to retard the runoff of surface waters from lands and in small watercourses; these have a direct bearing upon other responsibilities of the Department of Agriculture.

The same improvement measures which help to stabilize watersheds and prevent erosion, floodwater and sediment damage, also conserve water and plant food and produce substantial benefits in the form of increased and more uniform yields of higher quality crops, forage and timber. In fact, because the production increase values are more immediate and evident, at times these benefits tend to overshadow the fundamental runoff retardation and erosion prevention features.

However, and we must never lose sight of this, it is the fundamental watershed stabilization features which preserve and protect the resource base upon which our Nation must depend for growing needed food, feed, and fiber and which set the stage for favorable economic and production conditions.

Watershed improvement programs deal primarily with land and associated water and with the owners and operators of land. They recognize variations of soil types, slopes, and erodibility. They start with basic subwatershed plans for the use of land according to its capabilities to the extent feasible under existing economic conditions. They provide for the establishment and protection of appropriate cover and the installation of needed soil- and water-conservation practices and measures. They provide for supplemental structures required to control gullies, to stabilize the channels of small watercourses and to retard surface runoff and waterflow from watershed lands into the rivers and waterways. They take into account the productive re-

sources available to each farmer and rancher and provide as far as possible for their sound and profitable use.

While the principal benefits of watershed improvement programs are to watershed lands by prevention of erosion and reduction of damage resulting from frequent, small floods, they also keep great quantities of sediment out of river channels and main-stream reservoirs and reduce somewhat the damages caused by major floods. They provide the only protection under the national flood-control program above the main-stream protection and major water-control works. They constitute the upstream part of the total flood prevention and control job. They are not a substitute for, but rather a complement to, main-stream flood-control works.

Increasingly, recommended programs on the rivers and the watersheds are becoming multiple-purpose programs. This tendency is reflected in survey reports submitted to the Congress by the Department of Agriculture as well as by the Departments of the Army and the Interior. Furthermore, the Congress directed, in the Flood Control Act of 1950, that the program for the Arkansas-White-Red River Basins should be multiple-purpose and properly integrated with respect to its major purposes and segments.

In view of the essential character of watershed and river-basin programs, the interest and responsibility of the Department of Agriculture in them obviously rests upon a very broad base. In most of the major river basins of the country, agricultural and forestry values are predominant among the various resources served by multiple-purpose programs. The protection, conservation, and wise use of watershed lands as well as river bottomlands to help maintain a healthy agricultural economy in the interests of the Nation's food, fiber, and timber supply is by far the most important consideration in most of the comprehensive programs now being developed.

I am sure the members of this subcommittee appreciate that the various aspects of multiple-purpose developments are closely intertwined with farm and forest interests and agricultural welfare. For example, hydroelectric power development, flood control, and municipal water supply development are all influenced by the way watershed lands are used and by the conservation practices applied on them. Conversely, farmers in the river-basin areas receive a large share of the benefits flowing from flood control, power, and irrigation developments on the main rivers. In many instances, adverse impacts on agricultural values, such as the inundation of large areas of bottom lands that are particularly valuable for agricultural purposes, must be considered and carefully evaluated. The permanent sacrifice of such producing areas must be reckoned with and ways found to relocate displaced people so they can resume suitable places in the production and social economy.

The welfare and interests of the owners and operators of farm, ranch, and forest properties and their ability to discharge their production responsibilities to the Nation constitute an important and predominant part of the entire fabric of multiple-purpose river and watershed programs. It is in this broad and complex setting that the Department of Agriculture must plan and carry out its work in the land and water resources field.

The aim of the Department through the soil, water, and forest conservation programs which it administers is to develop, improve,

conserve, and wisely use the Nation's land and water resources to achieve agricultural productivity adequate to our food and fiber needs and consistent with the maintenance of our basic resources for production. Although these Nation-wide programs in themselves reduce flood damages, and help to control reservoir silting, etc., these benefits are not the primary objectives.

On the other hand, the watershed programs that are being formulated and carried out by the Department under the authority of the flood-control acts—and which are designed specifically to achieve the maximum practicable degree of reduction of erosion, floodwater, and sediment damages—accomplish their objectives by protecting crops, land, improvements, roads and bridges in rural areas, reducing sediment damages to reservoirs and harbors, enhancing the productivity of flood-plain lands, improving the quality of water supply, increasing groundwater recharge and producing more uniform stream flow. We are seeking purposefully to achieve these benefits to the largest degree practicable in keeping with the Nation's need for food and fiber.

This is our first objective. It is the basic core of our watershed programs. To gain this objective, the Department, in formulating its watershed programs, seeks to adapt, intensify, and accelerate proper land use and treatment. In some ways this is similar to what we are doing under national programs of the Department. But there is a vital difference. In watershed programs we work first on the watersheds with the biggest problems and where there is the biggest local interest in helping to meet them; and in each watershed we design and carry out a program which is properly balanced to give the greatest effects in reducing damages by erosion, floodwaters, and sediment. This procedure insures that necessary improvement work on watershed land is properly timed with the installation of supplemental run-off and waterflow retarding structures.

The fact that we are recommending many of the same kinds of measures in our watershed programs as we advocate in our going national programs seems, however, to have caused some confusion. Actually, there is no inconsistency between the two kinds of programs. The land treatment measures are the very essence of an adequate watershed program. On the other hand, we want to make it clear that from a dollar point of view, the benefits from the erosion prevention measures on the farms and ranches where they are applied, that is, the on-site benefits, measured in terms of increased agricultural productivity, generally outweigh the off-site benefits in flood-damage prevention. Nevertheless, total erosion, floodwater, and sediment damage prevention, and other benefits that can be achieved by adapting, intensifying, and accelerating the application of land treatment measures to meet the peculiar needs of each watershed, fully justify the recommendations we are making in our watershed survey reports to accomplish this end.

In many watersheds our surveys have shown that land treatment measures, of the kinds being generally applied in our national programs, are not in themselves sufficient to give the flood protection that is needed and justified. For this reason, in line with our objective of providing the highest practicable degree of flood prevention consistent with the benefits therefrom, we have included in our programs supplemental measures for stabilizing small watercourses and retarding runoff and waterflow before it gets down to the major stream

valleys. These additional measures include small upstream waterflow retarding dams, grade-stabilizing structures, tributary channel improvements (including cleaning and snagging, enlarging, and straightening), major gully stabilization structures, diversion dikes, subwatershed waterways, sedimentation basins and roadside erosion control measures.

From time to time the Department has been confronted with proposals to restrict its recommendations for authorization of work under the flood-control acts to structural measures and to depend upon other programs and authorities for the land treatment work. We oppose such a course because we feel that the recommendations and authorizations should include a complete and balanced program of all needed kinds of improvement measures, on a watershed basis, and that this is necessary to set the stage for a balanced schedule for installation of measures, from a timing standpoint.

Accordingly, it is the position of the Department that it cannot meet the responsibiilties imposed upon it by the flood-control acts or conform with the intent of Congress in enacting this legislation unless its investigations, reports, and recommendations are made with a view to developing complete programs of watershed improvement and protection. The test of whether a measure should be recommended for authorization under the flood-control acts is not whether it may be carried out by this Department under some other authority than the flood-control act, but whether such measure is for the purpose of runoff and waterflow retardation and soil erosion prevention. This is the criterion which this Department must follow in carrying out the objectives of the flood-control act. Any other approach would in our view thwart the plainly expressed intention of the Congress.

We feel that a watershed program of the type described above does not conflict with, but is complementary to, the program of major flood-control works, including large flood-control reservoirs, local levee protection, and channel improvements within the sphere of responsibility of the Corps of Engineers.

We believe that the Department of Agriculture is particularly well equipped to carry out its essential role as a copartner in providing the Nation with the kind of integrated flood prevention and flood-control program that is in the national interest. Available data indicate that about 75 percent of current average annual floodwater and sediment damages occur in the valleys of tributary streams. This is primarily because flooding is much more frequent on small streams and more land in the aggregate is affected, and secondly because a large amount of protection has already been afforded in many major river valleys by levees and floodwalls, channel improvements and major reservoirs. A large part of the flood damage in tributary valleys is agricultural, or primarily affects agricultural interests. It results mainly from losses of crops and damages to land and improvements, including rural roads and bridges. Our surveys and experience to date have indicated that the principal flood prevention objective of the Department's watershed programs is, and should be, reduction of rural agricultural damages in tributary valleys above the major protection and control works, not the control of floods in main-stem valleys or in downstream cities.

The Department is seeking authorization of watershed programs that are intended to accomplish certain specific erosion, floodwater, and sediment damage reduction objectives for each watershed reported

on. These programs are carefully designed on the basis of detailed field surveys to provide for maximum off-site as well as on-site benefits. We are recommending that certain types and quantities of measures, some of which are similar to those installed through national programs, be installed by local people with the help of departmental agencies during a given period of years to produce the benefits which we have evaluated in our surveys. At the current rate of installation, it would take up to 10 times as long to complete the kinds of needed work included in national programs in a given watershed as we believe to be essential to safeguarding the Nation's productive resources on flood-plain lands. Other vital measures, and proper design to obtain needed watershed-wide effects, would still be lacking.

What is the answer? In our opinion, merely stepping up the rate of appropriations for land-treatment measures is not enough. To get the right kind of job done, it is necessary to do it on a planned basis—first a program for the entire watershed, and, secondly, within that framework, work plans for individual subwatershed units. Then, on the basis of such subwatershed plans, we would seek appropriations to carry out the plans so that each type of measure, both the land-treatment measures and the supplemental structures, would be installed in their proper sequence and relation to one another. This is why we recommend in our survey reports all of the kinds of watershed measures that go to make up an integrated program for accomplishing the objectives of soil erosion, floodwater, and sediment-damage prevention.

The Department of Agriculture is not only already well equipped for this work, but I believe it is the only Federal agency that has the techniques and experience necessary to provide flood and sediment-damage protection to tributary valleys by small upstream waterflow retarding dams and other stabilizing measures.

Over and above the planning and design of watershed works of improvement, we feel there is an even more compelling reason why the Department of Agriculture has been given, and should have, major responsibility in installation of watershed programs. Such programs involve cooperation with literally thousands of individual landowners and operators in every watershed where they are undertaken. These are the people we work with on credit, price support, agricultural research, conservation, and other matters affecting farm, ranch, and forest lands. Agencies of the Department have developed the techniques of working with local people through their local organizations toward achieving, on a voluntary basis, the objectives of soil, forest, and water conservation, better agriculture, and now, we believe of better flood damage prevention.

The Department's agencies do not come to local people with tailor-made plans. We come to local people and ask them to work with us through their local organizations, such as soil conservation districts, watershed associations, flood control or conservancy districts, and their State agencies in developing the best plan to which they can subscribe and for which they will take coordinate responsibility with us in carrying it out. We ask local leaders of these organizations to approach their neighbors and seek to obtain, primarily through donation, the lands and rights-of-way needed for the construction of stabilizing measures in small watercourses.

We carry out our programs in every case with the enthusiastic suppport and assistance of the local people. If we can't get local people to go along with us, we don't go either.

We believe that the only kind of an organization that is equipped to deal with thousands of local people in any watershed is an organization which has dealt among them and with them for many years at the county and farm level and whose workers have come to know by first name most of the farmers in the counties. Department employees all over the Nation, along with employees of cooperating State agencies such as the State agricultural extension service, State conservation departments, and State forestry agencies, have this background and they work with the local people in carrying out watershed improvement programs just the same as they do in carrying out our broad national programs. For the watershed projects, we also have small technical staffs to help make sure that the technical hydrologic and other planning and design work is sound. This certainly is a program for cooperation with the public—on a man-to-man, cost-sharing basis to achieve benefits that are primarily of a local-community nature and which the local landowners can get out and see.

Of course, important benefits accrue downstream in the next county or the next State, such as protecting the large reservoirs on main stems against excessive loss of storage by silting, but the primary benefits are right on the watershed lands where the measures are installed and where the landowners and operators live.

Before beginning a watershed survey with flood-control funds the Department must have legislative authorization. We have such authorization for the watersheds of the rivers or waterways on which the Secretary of the Army is authorized to make preliminary examinations and surveys for flood-control purposes. On authorized watersheds the Department first makes a preliminary examination, a reconnaissance investigation, using existing data and information obtained from discussions with residents of the watershed, to determine whether a remedial program for runoff and waterflow retardation and soil-erosion prevention appears to be sufficiently feasible to warrant further investigations.

Negative reports of preliminary examinations are submitted by the Secretary to the Congress through the usual channels. Positive reports are used as one of the bases in establishing priorities for surveys along with such other factors as indications of prospective cooperation by the local people, the potential agricultural productive capacity of the watersheds, the needs for improvement within each watershed as compared to national needs, and the need to provide protection to downstream control works. As funds become available for surveys, the Department administratively decides the order in which the watersheds are to be surveyed.

Reviews of reports of surveys or of negative reports of preliminary examinations which have been submitted to Congress may be authorized by resolution of the Committee on Public Works of the House or of the Senate. The order of initiation of authorized reviews of reports is determined by the Department.

The Forest Service and the Soil Conservation Service have been assigned responsibility for conducting preliminary examinations and

surveys on a territorial basis by watersheds. The basis for determining which agency shall have responsibility is the prevalence of national forests and whether a watershed is primarily forest and range or farm land.

Although responsibility for any survey is assigned to either the Forest Service or the Soil Conservation Service, field survey work is carried out by technicians from both bureaus under the administrative direction of the responsible agency. Soil Conservation Service men are assigned to the Forest Service, where the Forest Service has responsibility for a survey, and vice versa. The Production and Marketing Administration, the Bureau of Agricultural Economics, and the Extension Service furnish consultation and advice to the responsible bureau. Other bureaus also participate in general basin investigations because the scope of survey is broader than that for runoff and waterflow retardation and soil-erosion prevention.

Field surveys are conducted by survey parties of technicians from the regular field offices of the responsible bureaus. The many aspects of the investigations are assigned, scheduled, and coordinated in accordance with a survey work outline prepared in advance. Procedures for conducting surveys are described in the Department's handbook, Preliminary Examinations and Surveys of Watersheds for Runoff and Waterflow Retardation and Soil Erosion Prevention in the Interest of Flood Control, January 1947, as supplemented. Instructions for the broader general basin investigations are covered in a series of memoranda from the Secretary.

Reports on surveys are prepared by the survey party and reviewed by interested local, State, and Federal agencies in the field before being submitted to Washington. In Washington the reports are reviewed in turn by the interested bureaus of the Department before they are submitted formally to the office of the Secretary for consideration and reference to the Governors of the States concerned and interested Federal agencies for comment under Federal Interagency River Basin Committee procedure. Finally, the reports are cleared through the Bureau of the Budget before they are submitted to the Congress for consideration.

There is at present a state of grave unbalance in our river-basin improvements. This unbalance, characterized chiefly by relative neglect and deemphasis of watershed and upstream problems and improvements, as compared to mainstream developments, must be corrected. In practical terms, correction of this disparity means adding to watershed investigations and stepping up operations work under these authorizations on a much greater scale than heretofore.

We have been engaged since 1937 in the formulation of watershed programs along the lines that we conceive to be the Department's basic responsibility in carrying out its coordinate responsibility under the flood-control acts. The Department's efforts were materially set back by temporary cessation of this program during the war years. We have just now reached the point where we are beginning to transmit to the Congress in considerable numbers reports on our surveys and investigations made since the war. We have thus far received authorizations for carrying out watershed programs in only 11 watersheds based on prewar surveys. Work is under way in each of them so there is no backlog of authorized programs awaiting the initiation of operations work. Investigations are underway in more than 50

additional watersheds, ranging from small creek-size watersheds to major river basins, such as the Columbia, Arkansas-White-Red, and New England-New York area.

Farm people and agricultural interests generally are rapidly becoming aware of their great stake in multiple-purpose land and water developments now taking shape in the river-drainage systems of the country. They are taking steps to correct the present lack of balance and coordination of the respective phases of these development programs. Farm people and urban people are bringing the force of their opinion to bear in an effort to make these programs of maximum usefulness. As a result of this increasing interest, added emphasis is now being given to fundamental considerations in comprehensive land and water programs, such as the principles:

(*a*) That water and land management and productive use of water should begin where the water falls on the land.

(*b*) That, working with the processes of nature, the first effective controls of surface water should be on the fields, ranges, and forests of the watershed lands.

(*c*) That man-made installations such as dams and reservoirs should be effective and coordinate parts of basin programs of water and land use, development, and conservation, that they are built to serve economic and social objectives, and that they are not an end in themselves.

(*d*) That separate segments or phases of comprehensive programs should be developed and installed together in proper balance as to timing of installation in order to serve efficiently the purposes of the total program.

(*e*) That the Federal Government, representing the stake of the general public in preserving the present and future resource base, should participate with individuals, communities, and States in land and water programs, but should not supplant local responsibilities and leadership by Federal dominance. What is done is important, but how it is done is important, too.

Agricultural interests generally feel that in river basin work so far there has been serious neglect of these and other fundamental principles, and that they have suffered by this neglect. This situation places a serious responsibility on the participating public agencies. Because of the predominance of agriculture and forestry in the Nation's land and water programs, a large share of responsibility naturally falls on the public agencies operating in these fields, particularly the Department of Agriculture.

It is important that concrete evidence of public response to watershed needs be quickly forthcoming in the form of prompt consideration and, if the recommended programs are considered acceptable, approval of those now before the Congress. This will pave the way for more widespread installation of measures of the kinds now proving popular and effective on watersheds where work is under way.

Major Multiple-Purpose Projects

Repeatedly throughout my statement, I have mentioned the relationships between Department of Agriculture responsibilities and the large river development projects of other agencies. There are certain specific relationships that need to be emphasized.

DISPOSAL OF PRODUCTS

The planning and development of major multiple-purpose construction projects, particularly as they have to do with irrigation and power development, have many important implications for agriculture, although existing applicable law does not provide for Department of Agriculture participation directly in the planning or development process. Because such developments are extremely important to the farmers of the Nation, we are deeply concerned about the manner in which water resource projects are developed and the policies that will guide both the planning and the operation of such multiple-purpose projects and programs.

In planning and developing major multiple-purpose water resource projects, the policies which will guide the disposal of electric power will determine the extent to which the ultimate consumers, particularly the farmers, will continue to receive benefits from such projects. For nearly 50 years our Government has maintained a policy of developing hydroelectric power as a function of multiple-purpose resource projects. Furthermore, as I indicated earlier, it has been our policy to dispose of the power developed by the Federal Government at the lowest practicable cost to the ultimate consumer. This policy has not been accidental, but is designed to distribute the benefits of public projects as widely as possible so that our people generally may come to realize the efficiencies that only widespread use of electric power can provide.

As a guide to the disposal and marketing of electric power from multiple-purpose projects, the Congress has from time to time indicated that nonprofit cooperatives, municipalities, and other public agencies shall be given preference in distribution of such power and that transmission lines will be provided to carry the power to the load centers of the distribution systems. These are fundamental requisites of a sound Federal power policy.

We call this to your attention because there are many forces working today which would eliminate the preferred position of nonprofit power distributors and which would have Federal power sold at the bus bar rather than at the load centers of the distribution systems. The provision of adequate transmission facilities to distribute power to preferential consumers as an integral part of multiple-purpose water resource development is fundamental to the maintenance of a sound Federal power policy.

In the use of irrigation water supplied by Federal reclamation projects, the Department has two major interests. The first is to cooperate with the appropriate Federal, State, and local agencies to determine if the land in the proposed area is suitable for irrigation. The second is to aid landowners and operators in planning and applying farm conservation and irrigation measures.

The mere fact that irrigation water can be brought onto land is not in itself sufficient reason for bringing it. Such physical qualities of good farm land as workable and productive soils, good drainage, characteristics, and freedom from erosion are also essential qualities of good irrigable land. However, because of the operations and management necessary in applying water to land, the effects of additional water on the land, and the costs of irrigation developments, many spe-

cific factors must be given thorough consideration to determine the suitability of prospective lands for irrigation.

After the irrigability of the land has been determined, the water supply assured, and adeqaute provision made for bringing the water to the farms, trained technicians are needed to assist landowners and operators, individually and in groups, to solve their on-the-farm irrigation problems. As part of their regular programs, employees of Department and cooperating State agencies furnish research, educational and technical assistance, credit and direct aid needed by thousands of irrigation farmers.

Besides assistance in the preparation of farm plans and the application of soil and water conservation measures, technical aid is provided in the design and layout of farm-irrigation systems.

After the designs have been completed, and accepted by the farmers, technical and other assistance may be provided in land leveling and laying out lines and grades for installation of the systems. If the farmers are not experienced irrigators, the technicians may help with the installation and with the initial operation of the system.

The irrigation plan is made a part of regular farm-conservation plans. In this way farmers are helped to conserve, improve, and properly use their land and water resources.

COST ALLOCATION OF MULTIPLE-PURPOSE PROJECTS

The allocation of costs of multiple-purpose reservoir projects is important to agriculture insofar as it affects the charges to farmers for electric power and the reclamation of land by irrigation, drainage, and flood control. The Department believes that the costs of multiple-purpose reservoir projects should be allocated on a basis which properly recognizes the added costs of including each separable function and a fair share of the joint costs.

In practice, this requires that each function be allocated its full separable costs—power, the cost of the power installation, and any transmission facilities; irrigation, the full cost of diversions, canals, laterals, and drainage ditches, and so forth. The share of the joint costs allocated to each function should be based upon the relationship of the benefits for the function less its separable costs, if any, to the total project benefits, less all separable costs.

In no case should the sum of the separable costs and the share of the joint costs allocated for reimbursement to a specific function exceed the cost of providing the same or a comparable function in the most economical alternative.

Mr. JONES. Mr. Secretary, may I make an inquiry at that point?

Secretary BRANNAN. Yes, sir.

Mr. JONES. Do you intend to include transportation as a factor of cost in this statement?

Secretary BRANNAN. The transmission of power, Mr. Chairman?

Mr. JONES. You say, "The cost of the power installation and any transmission facilities; irrigation, the full cost of diversions, canals, laterals, and drainage ditches, and so forth.

Suppose it has navigation involved? Is that a cost to be borne by the users?

Secretary BRANNAN. Of the navigation?

Mr. JONES. Yes.

Secretary BRANNAN. Yes, sir.

Mr. JONES. I just wanted to get that point clear. Thank you.

Secretary BRANNAN. To the fullest extent practicable, the beneficiaries of each specific function should bear the costs allocated to that function without shifting of costs to nonbenefiting interests, either public or private.

These cost-allocation principles are in agreement with the recommendations in the report of the Federal Inter-Agency Subcommittee on Benefits and Costs in which their application is spelled out in greater detail.

Low-cost power, as I have pointed out, is essential. But we are more and more concerned about the growing difficulty of obtaining low-cost power from our vast natural resources. There is an increasing tendency in the direction of burdening power investments with costs not related to power development which could develop to such an extent that low-cost Federal power would no longer be possible.

Steps should be taken to assure that the power function of multiple-purpose developments will not be burdened with the costs of including other functions in such developments. Such a situation exists as the result of inadequate evaluation practices and the procedure for allocating costs to the several purposes. It is a common practice to allocate the costs of multiple-purpose development to the nonreimbursable functions, to the fullest extent that their respective benefits will permit. Any excesses are then reallocated to power for reimbursement. Likewise, that portion of the cost of irrigation development which farmers are judged not able to pay as a part of their water costs is reallocated to power for reimbursement. In addition, the power investment, including such reallocated portions of the total investment, bears a 3-percent interest charge. This means that, as the less efficient multiple-purpose projects are developed, power is allocated a larger and larger proportion of the total investment for reimbursement. As this occurs, power rates must be higher than would otherwise be necessary in order to carry such excess investment as may be allocated to power.

We cannot see any justification for such formulation and allocation procedures. It appears that only those functions or purposes should be included in multiple-purpose projects or programs as can be justified in terms of the benefits which they produce. In turn, power should not be called upon to reimburse more than its own direct costs and a justifiable portion of the joint costs that are essential to the power function.

If such a cost-allocation policy is not adopted, low-cost Federal power will cease to be a product of our multiple-purpose water-resource projects.

THE BASIN ACCOUNT

We endorse the principles that, in formulating projects and programs, the purpose is to secure maximum net benefits to the Nation as a whole from the development and use of its land and water resources. To assure the realization of maximum net benefits, each project and program component must be sound and justified; in other words, the anticipated benefits must exceed the added costs from including each major program component which can be separately evaluated.

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The Department of Agriculture is opposed to the use of a basin account or any other device which would have the effect of supporting the inclusion of any program component which can be separately evaluated in a project or program which on its own merits is not justified.

We do not object to the use of a basin account as a means for summarizing and comparing the revenues and costs of a basin program. However, for this purpose, we believe that the basin account should encompass all aspects of multiple-purpose programs rather than be limited to certain such aspects as irrigation, power, and water supply.

Let me repeat that I am happy to have had this opportunity to testify on a subject that is just now of paricularly keen interest to the entire Nation.

We in the Department want to assist this subcommittee in every way we can. With the other members of the Department, I will be happy to discuss in more detail any aspect of the situation that you want to take up.

Mr. JONES. Thank you very much, Mr. Secretary, for this very full and complete statement. After that long statement you would be entitled to a good, long rest.

Mr. Secretary, we have adopted a procedure here that may be a little bit unusual and probably you are unaccustomed to it, but the field in which we are making this study is so broad that we first have Mr. Curran propound the general questions and then permit the members of the committee, within the confines of the subject matter of the question, to propound further inquiries as they may desire.

So, Mr. Secretary, we will proceed now and Mr. Charles Curran, staff director of the committee, will ask the first question.

Mr. CURRAN. Mr. Secretary, I would like to refer to your statement. You point out that upstream works are not a substitute for but rather a complement to main-stream flood-control works. Here are two items I would like to read that relate to the subject. One is a quotation from an editorial which appeared in the Saturday Evening Post. It reads in part as follows:

> * * * the Soil Conservation Service's type of flood-control work for Little Washita Creek could be established for less than one-third of the cost of the newly proposed Army engineers' project. The local plan would do the job more effectively, with no sacrifice of fertile bottom land, such as is demanded by most big reservoirs.

A recent publication of the Bureau of Government Research, University of Kansas, summarizes the Missouri River Basin proposals for development. The writer states, and I quote:

> The latest of these interagency disputes took place at the MBIAC's meeting at Topeka, Kans., in December 1951. The Corps of Engineers and the Department of Agriculture wrangled over the relative importance of watershed treatment and large dams. The corps inferred that the Agriculture Department was infringing on its flood-control functions. The effect of the squabble was to nullify statement made by both agencies during the last few months that their basin programs were not competitive but complementary.

The first statement would indicate that there has been some undue emphasis given to effectiveness of soil conservation by proponents of that program. The second statement refers to a wrangle between the two departments.

Is it not this conflict that is delaying certain watershed improvements out in the Missouri River Basin?

Secretary BRANNAN. Well, Mr. Curran and gentlemen, let me say first of all that I think everybody recognizes the tendency of a reporter or writer to emphasize the arguments that go on between people rather than the areas of agreement.

Mr. JONES. Mr. Secretary, in that connection let me point out to you that the basis for such a statement could be well-founded in view of the fact that the Appropriations Committee this year failed to appropriate a single dime to be used in flood control in flood areas on the Kaw or Republican Rivers. Last year we spent approximately $30,000,000 for relief and rehabilitation work in that area. The Appropriations Committee gave this reason: That there were conflicts in the area. Therefore they do not think it wise to proceed because there was not any general plan of works.

Of course, we encountered those irreconcilable views which were expressed before this committee in authorizing that work to be committed. So I just want to state here that we are without funds this year and we have had one of the great floods of the country, with water at the rate of 525,000 feet per second in that area, and we are doing nothing to prevent it.

Secretary BRANNAN. Mr. Chairman, I join you in deploring that situation.

Mr. JONES. Let me say this, too, if I may interrupt you: The great tragedy in the Missouri Valley can be laid in large part to the policy of too little and too late, and too confused, as a reason why we are not getting work done right.

Secretary BRANNAN. Mr. Chairman, I think it is correct to say that we have not gotten all the work done that we ought to have gotten done. I mean, everybody concerned—the Government, the States, and the people. As a matter of fact, there was a time, you know, when we were losing many millions of acres of land per year in the southeastern part of this country and all over the country because we did not know as much as we ought to have known about how we ought to handle and take care of our land. We lost that through a lot of different devices: Erosion by water and wind; floods from time to time. We lost that just because we did not know how to take care of our land and to retain its fertility. We did not know about crop rotation and many other things. Some of the floods in this area which are going on today are the result of the fact that man has come in and intensively used those lands, but has not used the land as intelligently as he could, because we did not have the knowledge and experience to use it.

I would like to say, Mr. Chairman, with respect to the differences of opinion which exist among Members of the Congress, and in a smaller degree, I think, among some of the Federal agencies, that, after all, what we are all trying to do—and the very reason I am here today, and the reason the rest of the folks have appeared before this committee—is to try to talk this thing out and get down to a sound basis of cooperation and integration for the ultimate development of these lands in the best, most practicable, and efficient way.

The counsel for the committee referred to the Washita. I took the liberty of bringing along a map of the Washita showing the work we have done in it. In this outlined area there are about 65,000 acres of land. It is all privately owned land. You will notice the darker

areas indicate that these are our small dams or small water-retention structures. Around each of them is a hatched area which indicates the maximum extent to which the water would back up before going over the front of the dam. The darker area is the area of water level which would stay in the dam after a grass runway or grass waterway carried off the surplus. The yellow area here indicates the 4,700 acres of the Washita or the Sandstone branch of the Washita, which is flooded almost every year. This is agricultural land.

As a result of the annual rainfall in the area these lands are damaged by sedimentation. The crops are covered and our productive capacity is very substantially injured.

By the installation of these kinds of measures which are outlined in dark and can be seen from any place on the committee bench, I think we have started the major part of the water-retention or runoff program. However, that is only part of it because these dams are all built on private land. They are built by a local contractor in the area, and the Government, with flood-control money, has paid for them, but has paid for them by utilizing the efforts of local people in the area for construction.

Then we have done one other very important thing. Before these dams are constructed on this man's land, or these owners' lands, there is an agreement entered into with that man to the effect that he must do 70 percent of the other kind of work which is essential to the preservation of his soil. In other words, he must follow out a soil program—a soil-preservation program for his whole area.

Mr. JONES. Is that an enforceable agreement?

Secretary BRANNAN. Well, it is enforceable in this way: That we do not start the dam until he has got it done. You see, it is just that enforceable. We will not build this dam until he has 70 percent of the work done on his land. The 70 percent of the work will be such that he will almost have to complete it, and he has sense enough to complete it anyhow when he begins to see it.

The other part of the agreement is that he gives to his soil-conservation district—not to the Federal Government or anybody else—but he gives to his soil-conservation district an easement, or access for the building of that structure, and ingress and egress to it.

One other thing about which your question would be appropriate, is an agreement to maintain it thereafter. If he does not maintain it, of course the natural results of failing to maintain it are about as bad a punishment as he could get anyhow.

Let me add another little word of history, too, if I may. This Washita area is in Oklahoma—Oklahoma, I think, is maybe 45 years old as a State now. Perhaps this territory was settled 50 years before that, but on the average this land has gotten into this condition, with all these little scars which are outlined on that map, in the course of somewhere around 75 years, or maybe a little more—maybe 100 years.

When we first came in and started plowing up this land and using it with the techniques our farmers knew then, but about which we know a great deal more now, that is what happened. This is the first time in the history of the world really, and of this country, in which a complete job of treatment of every acre of land according to its needs has been undertaken and almost completed. For the first time we are reversing the destructive forces which come into play when man begins to use land for the production of food and fibers.

In due course our engineers tell us that the destruction which occurs almost annually in this stream in the area outlined by yellow, will be reduced by about 98 percent. We are well on the way to do it, because each one of these structures that is on the map is in there today. I flew over it just 3 days ago, or just about a week ago, with Governor Turner, and saw the bulk of these and the water behind them, and the grass runways that carry off the overflow, and all the rest. Many of the other things you could not see well from the air, such as all the little gully blocks and the grass work.

I do not say to you that that is a substitute for the on-channel main reservoir work, but I do say to you that to the extent this is efficient—and I believe it to be efficient—and to the extent this can be multiplied over the whole area of the Washita and the other rivers which flow into the Red River over in Texas, if I remember correctly—to the extent that that can be done on all of those lands there is the very direct effect upon the on-channel structures. That effect is mainly the retardation of the runoff from this area in a cumulative way from all of these areas all over the country, which would mean that the on-channel structures would not have to stand the strain which is being put on them in the Missouri area today.

I do not say if we had done all of that work above Council Bluffs, and Ohama, and in that area, that there would be no flood going by Omaha, but I can say to you that in my opinion the height of the flood would not be qiute so high as it is today, and dams and reservoirs on the stream would last a great deal longer and would not be filled with sediment. More importantly than that, the people of the Nation would be maintaining for themselves a productive resource here without which this Nation cannot be strong.

If I might digress just a little to remind you of some of the things which I think this committee knows: We have increased the production from the lands in this country, that is, our agricultural production has increased from 1940 to 1950 roundly by about 40 percent, with the same acres of land, or approximately the same number of acres of land in use, and with 6 million people less working in American agriculture. In other words, we are getting our increases in our food supplies today vertically and not horizontally. Every time we increase our population by 2,500,000 people a year, or 7,500 people each day, we cannot go out and add new acres of land and bring it into cultivation. We have to get the increased food to take care of those people by the more wise and efficient use of the very lands upon which we are now working and from which we are now getting our food.

Therefore the importance of this kind of thing and the importance of integrating it with the over-all flood control work cannot be underestimated. The importance of doing this work out here which contributes to the flood control and flood prevention is secondary, though, to the importance of doing the work which makes it possible for us to increase our food supplies as we are going to have to increase them from time to time.

Mr. Chairman, that is a little longer answer than I hoped to have to give to most questions, but I did want to make our basic position clear.

Mr. JONES. Mr. Secretary, I assure you that type of program has always been well received by the Committee on Public Works because in 1944 they wrote into the Flood Control Act the Federal responsibility for carrying out extraordinary works in the Little Washita area.

Let me go back to the situation on the Missouri River and its tributaries. Does the Department of Agriculture oppose the construction of the Tuttle Creek Dam?

Secretary BRANNAN. I want to say first of all we did not oppose the construction of any of the structures as such.

Mr. JONES. What I am trying to get, Mr. Secretary, is some understanding between the two agencies so that we can get the work done. That is the problem we face. We pass an authorization for certain works to be undertaken. Yet we get nothing done and the people of the country are alarmed and distressed over the fact that Congress is impotent in accomplishing its objective in flood control. Is there not plenty of work for the Department of Agriculture, the Corps of Engineers and the Reclamation Bureau, and whoever is concerned in that area?

Secretary BRANNAN. There sure is, and I say very frankly there is need for integration of our efforts more than we are getting now; but I do want to say to you, Mr. Chairman, for the benefit of some of the public who do not understand this, that we are somewhat in the position today, it seems to me, of the Ford factory, or an automobile factory. It took 2, or 3, or 4 years to get the plant built to begin to turn out the first automobiles. Then when they got going the automobiles came off the line in rapid order. I think we are now in that period with respect to much of our on-the-land soil and flood-prevention work. We are getting to the place where we are going to turn out a surprising number of projects, like the Washita, all over this country. They are well on the way to being planned and done.

To the extent our manpower resources and fiscal resources will permit, this kind of a job can be started anywhere in the United States almost at the drop of a hat, and can be completed in short order. I think we should complete it even in shorter time than we have proposed that they be completed.

However, being completely frank with the committee, I think if we had come up proposing to do some of the things of this character in a short period of time instead of in 10 years, we would have brought the costs up and thereby doubled or tripled the costs that would be necessary to get the job done. It would have frightened everybody to the point where we might not have gotten started at all. So we have some of these laid out on a 10-year basis when we sincerely believe that they ought to be done much faster.

Mr. SMITH. Mr. Chairman.

Mr. JONES. Mr. Davis.

Mr. DAVIS. I pass to Mr. Smith.

Mr. SMITH. I want to get back to the question you originally asked the Secretary before his reply. What is the position of the Department of Agriculture in regard to the Tuttle Creek Dam? I did not quite get your answer to that.

Secretary BRANNAN. Let me say this, and then I am going to ask somebody who is familiar with whatever reports we have turned in on it, to answer you. As a matter of principle we do not oppose any on-channel structure that the Corps of Army Engineers say is essential to a flood-control operation. We may raise some questions about it and say, "If you will do this kind of work back on the watershed,

or if you will see this can be done concurrently with the work on the channel, then your on-channel structure might take on a little different character or aspect. However, as a matter of principle if the Corps of Army Engineers say such and such a dam is essential to flood control on the main stream for which they have a responsibility, we are not going to say "No." But, through the interagency committee, we are going to offer them such suggestions as occur to us about how the total job can be more efficiently done.

Mr. SMITH. That is an item which not only the Corps of Engineers ought to be concerned with, but the Congress at least ought to be in one fashion because it authorized construction.

Mr. MAGEE. Ninety percent of the farmers say it should not be built, judging from my mail.

Mr. JONES. That is the situation we are trying to get at. Certainly the farmers in the area oppose the dam on the grounds that the Department of Agriculture is able to provide adequate flood protection. Then they cite the fact that there would be an inundation of 55,000 acres of land in the Blue River Valley and it would decrease agricultural production by $6,000,000. There seems to be a conflict between the Department of Agriculture and the corps as to who is going to do the work in that area, and it seems we should reconcile those differences immediately.

Secretary BRANNAN. I certainly agree with you, Mr. Chairman. May I answer specifically now the question again as to Tuttle Creek Dam? We have not opposed it, and it is part of the President's recommended program. We have submitted a proposal for doing the work on the watershed back of the dam in the fashion in which this is being done here.

Mr. JONES. Mr. Secretary, do you think that fact is known in the area encompassed by the Kaw, the Blue, and the Republican Rivers, that that is the position of the Secretary of Agriculture?

Secretary BRANNAN. I think it is. I brought Mr. Gladwin Young, who is from that area, here today. Mr. Chairman, if you would like I would appreciate having him make a comment about the attitude of the people there.

Mr. JONES. We would like to have a loud voice from any source to get to those people out there.

Secretary BRANNAN. Mr. Gladwin Young is the Department of Agriculture's representative on the interagency committee.

Mr. JONES. We are delighted to have you. We had the opportunity of being with him at the interagency committee at Bismarck, N. Dak. He was there last year.

STATEMENT OF GLADWIN E. YOUNG, FIELD REPRESENTATIVE, OFFICE OF THE SECRETARY, LINCOLN, NEBR.

Mr. JONES. State your name for the reporter.

Mr. YOUNG. Gladwin E. Young, field representative of the Office of the Secretary, Lincoln, Neb.

Your question, Mr. Chairman, was whether or not the Department of Agriculture opposed Tuttle Creek Dam.

Mr. JONES. Yes, sir.

Mr. YOUNG. No. Not to my knowledge.

Mr. JONES. Is it generally known in the area that the Department of Agriculture opposes it?

Mr. YOUNG. No, I think not.

Mr. JONES. Have you been to Manhattan and Topeka, Kans., lately?

Mr. YOUNG. Yes, sir. I attended a good many meetings down there this year. I have made a good many talks with regard to the need for a balanced program within the Missouri Basin. I am interested particularly in the reference made about the so-called controversy in the Missouri Basin Inter-Agency Committee at Topeka on December 14. I think we in the committee did not look upon that as a controversy in the discussions we had. It was the kind of discussion we carry out in the inter-agency committee.

The statement that was made, to which I took exception, was that the program of soil conservation would have had no effect on the Kansas flood last July. I took exception to that statement by stating that we had just presented to the inter-agency committee that day a statement that there would have been a material reduction in flood damage if the program proposed in the Missouri Basin agricultural program had been installed.

I think it was not in the nature of a controversy, Mr. Chairman.

There is, however, a controversy that is not one between the Department of Agriculture and the Corps of Engineers, but a controversy between the points of view of citizens within the State of Kansas, the State of Nebraska, and others in the lower part of the Missouri Basin. Some of those people take the point of view that if watershed management practices were installed, including soil conservation practices and measures for small watercourses, if they were installed that is all that would be necessary. The Department of Agriculture has never taken that position and has definitely stated at every public meeting I know anything about that we do not support that point of view. Nevertheless, it prevails in a good many quarters. That is used by some people who are opposed to the larger dams, as an argument against it.

I recognize the controversy you are speaking of, Mr. Chairman, but in my opinion it is not a controversy between the Corps of Engineers and the Department of Agriculture as agencies. It is a difference in the point of view of the people themselves.

Mr. JONES. Mr. Young, let me read further from the Bureau of Government Research Report, University of Kansas, on that very point. It says:

> MBIAC criticized frequently in the past for its failure to resolve interagency disputes in the basin has attempted to smooth over these disputes and convince the citizens of the valley that the Federal agencies have reconciled their differences. That they have failed to do so is attested to by recent disagreements with the committee. At the January 1951 meeting of this body there was disagreement among the States representatives over the division of the Missouri's waters. No decision was taken. A month later a disagreement over big versus small dams occurred when Governor Smith, of Missouri, led the fight against large dams.

Would you like to comment on that?

Mr. YOUNG. No; I do not know of the fight led by Governor Smith. I am not familiar with that, Mr. Chairman.

Mr. JONES. Is there any necessity for larger reservoirs to be built on the Kaw and Republican Rivers and the Blue River? Is there a necessity for extraordinary water storage capacity to alleviate flood conditions?

Mr. YOUNG. Mr. Chairman, I think that the flood damage in the lower basin will not be reduced materially until such storage is built. Let me also add that that same system of reservoirs will not reduce materially the enormous flood damage that takes place in the tributaries above them. Our position on the Interagency Committee—and I think this is the position of the Corps of Engineers and the Department of Agriculture—is that the large dams are a necessary part of a coordinated flood-control program. We take that position as far as the Department of Agriculture is concerned.

We also take the position that those dams can protect only the property below them and that a large share of the average annual flood damage, maybe as much as three-quarters of the total annual flood damage, takes place above those reservoirs, and that that damage reduction must be a part of the Missouri Basin program for flood-damage reduction. That responsibility, as Secretary Brannan mentioned, is the kind of a job we propose to do in the Department of Agriculture.

Mr. JONES. To take care of that remaining 25 percent you are going to have capital structures which will have sufficient capacity to take care of that excessive amount of water at the time of unusual rainfall?

Mr. YOUNG. Yes, sir.

Mr. JONES. Return to the question of the discontent that is felt abroad in that area, that has been reflected in the Appropriations Committee's budget for this year. Distant groups came in and testified before the Appropriation Committee. They said that a controversy prevailed on the type of program needed for the area. Now, has the Department of Agriculture been heard on that point before the Appropriations Committee?

Secretary BRANNAN. We were not.

Mr. JONES. Mr. Secretary, do you not see the necessity for us doing something here to eliminate the misconception and the misconstruction of the feeling of the Department of Agriculture and the Corps of Engineers with respect to the work needed in that area?

Secretary BRANNAN. Certainly I think it is both our obligation and yours. I mean, the executive branch and the legislative branch. It is our obligation to eliminate any kind of conflicts which reduce our efficiency in any way, shape, or form.

Mr. JONES. Because that conflict is of such moment that the Congress cannot dissolve the differences because there are too many forces involved.

Secretary BRANNAN. Mr. Chairman, may I make this comment about it? Sometimes in order to gain an objective in which one group of people have a very particular interest, or about which they have a very firm conviction, whether right or wrong, they use as a device the creation of an impression that there is considerable controversy and misunderstanding, and that therefore nothing should be done about it. If you are on the side of a question which wants to do nothing about a problem, of course all kinds of devices are open to you to stop things from being done.

Mr. JONES. And the forces that have been in opposition have accepted that invitation to come in and oppose it, have they not?

Secretary BRANNAN. I think that could be properly said in some of these cases. Indeed it could. But from the standpoint of the understandings between the Army Corps of Engineers and the Depart-

ment of Agriculture, there is no misunderstanding, which in my opinion has slowed down any of the appropriate work that ought to be done.

Mr. GEORGE. Mr. Chairman, will you yield?

Mr. JONES. Mr. George.

Mr. GEORGE. You are discussing the State of Kansas, the Third District of which I am the Representative. I read about 9 or 10 daily newspapers from the State all the time and several weeklies, and I noted a great deal of controversy over Tuttle Creek Dam is occasioned by the fact that the folks who reside in the Blue River Valley think that if they had a soil conservation program in the upper watershed that there would not be a need for the large dams. They are using that as an excuse to stop the inundation of their land.

I think that if the Department of Agriculture would tell these folks that they cannot stop all that water coming down the valley then the opposition would stop, but I do not believe it has ever been positively told to them.

Secretary BRANNAN. Well, sir, that is the very thing I was talking about a moment ago.

Mr. GEORGE. They are using the agricultural program as an excuse to stop large reservoirs.

I want to take one exception to your statement on flood damages. The bulk of the $700,000,000 damage done in our State was in the mainstem of the Kaw River from Manhattan down in the last flood. It was not done in the upper watershed. It was done from the city of Manhattan down to Topeka, Lawrence, and Kansas City. The Kaw Valley is one of the most fertile valleys, or was one of the most fertile valleys up to the time of the last flood, that we have in our State. I think it is either sixth or seventh in the United States. The production of that valley is gone for years to come. The upper watershed control would not have stopped the loss of that river valley. You cannot have rainfall like we have in the eastern part of the State and stop it without reservoirs. It cannot be done.

I spent over 10 years in the State highway department in our State, during which time I dealt continuously with flood-control problems as they affected our main streams. I know we even have a great variation in the point of saturation in our soil in that State, in the difference between eastern Kansas, central Kansas, and western Kansas. We are semiarid on the western side on down to central Kansas, where we have 20 to 25 inches of rainfall, and on up to 40 in the eastern part of the State. If you say that we can by proper soil conservation methods stop rainfall of 5, 6, and 8 inches without a runoff, you will never make anybody in eastern Kansas believe that.

Secretary BRANNAN. Mr. George, I am sure you understand from my statement and the things I said subsequently that we do not represent that to be a fact at all, and never have. We know our history and we know there were floods in the Mississippi Valley before the white man started ploughing up the ground.

Mr. GEORGE. There was in the Kaw River too.

Secretary BRANNAN. And many of its tributaries. But I hope that the committee will not expect us to get in the position of saying that, because we think there are volumes of water which sometimes come and are recurrent in our history, and which are more than can be

cared for by this kind of a program, that we should cease to talk about this kind of a program. We say that the two are complementary and supplement each other and that you need the on-channel structures just as much as you need these for flood-control and flood-prevention purposes alone; not mentioning for the moment the need for this kind of structure from the standpoint of preserving the productivity of our soils.

Mr. JONES. Mr. Secretary, in that connection I believe that the Soil Conservation surveys indicate that 75 percent of the flood damage occurs above areas which the large dams are designed to protect. Could that be reconciled with the fact of what took place there last year?

Secretary BRANNAN. Let me just simply say this: Of course, the flood damages occur in many small tributaries like the one here on the map, but also there is tremendous damage in the main stream below. You remember I pointed out in my statement the reason that there was not greater damage in the main stream below is because of structures that have already been installed there.

Mr. Young has some figures on that very point he would like to present to you.

Mr. YOUNG. May I submit a statement that was presented to the Missouri Basin Interagency Committee at its Topeka meeting, December 14, relative to the amount of damage that could have been reduced had the program proposed by the Department of Agriculture been applied in the Kaw Basin. I would like to read partially a statement made by Mr. Kirk M. Sandals of the Soil Conservation Service:

> It seems appropriate now to think about the estimated reduction in damages that could have been brought about during the 1951 flood periods in the event a complete watershed program were applied to all of the small watersheds in the Kansas and Osage River Basins. In connection with land damage caused by sheet erosion, it is estimated that over-all reduction of 50 percent could have been attained. This amounts to $100,000,000. In connection with all other damages, it is estimated that over-all reductions of 38 percent could have been attained. This amounts to approximately $31,540,000. The total damage reduction is estimated to be $131,540,000. This saving in wealth should have great significance to the people in the Kansas and Osage Basins and to the Nation.

Let me point out that those figures are calculated for areas above the watersheds, or flood plain lands where there would have been Corps of Engineers dams had they been applied at that time.

Let me correct that by saying that they were the dams that were proposed for the Kansas and Osage River Basins up until the meeting of the Interagency Committee on December 14.

Mr. JONES. That is like saying what came first, the chicken or the egg. It seems to me we can go ahead and make these capital improvements. Let us take a river where we have complete flood-control installations on it, like the Tennessee River, where we have 100-percent flood control on the mainstem. We would not say that there is not a need for tributary control of watersheds in that area, would we? You would not condemn that, would you?

Mr. YOUNG. No, sir.

Secretary BRANNAN. No; of course we would not.

Mr. JONES. And you would not say that the work of the Department of Agriculture could not proceed in an orderly fashion if the largest structures were constructed that you recognize to be an integral part of that system?

Mr. YOUNG. No, sir.

Mr. JONES. Then why do we not do this? Why do we not let the people out there know the position of the Department of Agriculture and its views with respect to the over-all undertaking? We were out there last year and inevitably in every community in which we went there was always the great conflict that led to the Department of Agriculture. For the life of me I could not understand why the people continually contended for a proposition such as that, if somewhere along the line they were not given extraordinary encouragement somewhere.

Secretary BRANNAN. Mr. Chairman, I assure you we have not in any wise encouraged any farmers to take the position which you have described or which Congressman George described a few minutes ago. We have not done it consciously, I assure you, and I am confident we have not done it unconsciously, because our statements have been consistent with what we have said here this morning. They have been consistent over a long period of years.

We make two points, though: That whatever the causes may be, the work on the channels on the main streams has gotten well ahead and very far ahead of the work on the back reaches of the smaller and tributary streams. We must bring them abreast of each other and we must accelerate the type of work which I described in the Washita wherever the on-channel structures are being built, in order to preserve the life of the on-channel structures and in order to make them completely efficient, as they cannot be if this kind of work is not done.

Mr. SMITH. Mr. Chairman, on that point I would like to ask Mr. Young a question. Did you participate, or did somebody from the Department of Agriculture participate in the conference held at the Kansas State College in Manhattan last November, or sometime around that period?

Mr. YOUNG. Yes, sir. There were two of us. Mr. Sandals and myself.

Mr. SMITH. I heard a radio program that developed from that conference and there were some reports about it in which this specific statement was made: That there was conflict between the Department of Agriculture, or the Soil Conservation Service—and I have forgotten the exact reference made—and the engineer as to how the work out there should be done. I mean, further evidence as presented to the Congress by the reports we get and by the overwhelming mail that these people in the Blue River Valley write, in which they always enclose some clipping saying what the Department of Agriculture plans to do. For instance, the Tuttle Creek Dam. I do not think there is any possible misinterpretation but that the people out there are saying that the Department of Agriculture could do this without building the Tuttle Creek Dam, and I do not see how they could get that impression unless somebody from the Department of Agriculture told them to do it.

Secretary BRANNAN. No. I think it is subject to another interpretation.

Mr. SMITH. I do not want to leave the implication there that that is the policy. It probably came from somebody very far down the line with the Conservation Service.

Secretary BRANNAN. Well, they went out to get a statement and they got it. Maybe they did not even bother to go get it, but they went out to get the statement that they wanted.

Let me say this to you: This morning I said to you when these works are done and the balance of the other work which is agreed to be undertaken and which is 70 percent done behind these little structures, that 98 percent of the annual damage which occurs in this Sandstone watershed will be removed. However, we recognize that about once in 10 years there will probably be damage even with these structures here [pointing to map] because if all of these fill up at the same time and the grass runways or other outlets carry off all the water and there are large volumes of water that accumulate there, there is going to be some damage in there. If someone on this committee wants to take the position, as was said today, that you can reduce the damage in this particular stream channel by 98 percent, that therefore it means you would not have to have structures below, he could very well say, "Well, I got the basis for saying that because of testimony the Secretary gave this morning." But, as a matter of fact, that is not what we are saying in total. We are saying that there are flood times. There are periods of time in history before the white man ever started plowing up this land when they had floods. That was when nature was doing the job almost perfectly in those times, and they still had floods.

There will be need for some on-channel structures.

Mr. JONES. Just in keeping with what you have stated, is it not a fact that the Country Gentleman and the Saturday Evening Post have extended the philosophy or concept employed in the Washita to be applicable to every type of flood situation throughout the country?

Secretary BRANNAN. Mr. Chairman, I must confess to you, and I hope it will not drop their circulation, that I am not a careful reader of the magazines, and I am not really sure that I know what they say in all of these publications.

Mr. STEED. I would like to make a little comment here about the Washita. I do not know anything about the situation in Kansas, but I think I do know something about the situation in Oklahoma, and maybe it will help you to find some of the source of the agitation that comes into the picture which is causing people to say there is a controversy.

I think the controversy stems not from any Federal agencies, but from what the people at home think they know themselves. On the Red River the Texoma Dam was constructed and the people who were moved out or flooded out are no longer there. The hydropower production has been in operation there for a number of years. I understand the people have found that there were two things at least in connection with the Texoma Dam that the Army engineers told them, that were not exactly like they had been represented to be. In the first place, the dam cost more before it was finished than the original estimates, which is a common result on the projects that they build. In the second place, the siltation of the dam has been much more rapid than the original estimates.

That is something that I happen to know about personally because just last year I was down there and now the estimates are that it is filling up three times faster than the estimates said it would fill up

when it was built. That is largely because of the siltation from the Washita watershed.

In the building of these experimental projects on the Washita watershed the newspapers at home have given the Department publicity. In the case of the Cloud Creek experiment 2 years ago this happened: After they had built this project as was demonstrated here on the map, they had a cloudburst one day there with 5½ inches of rain which fell almost in an hour's time. The results of that were surveyed by numerous persons, including the Federal agencies and also the press. The result was that this project did work. The Cloud Creek did not go out of its banks despite the fact that a cloudburst had fallen on the area with a large amount of water in a very short space of time.

It also showed when this water did run off and finally wound its way down into the main Washita River, that the muddy waters typical of the Washita were typical in this rain, but that where this water from this particular little watershed entered into it the water was very clear, meaning that the water off the upstream watershed-control experimental area had left most of the soil back on the farms.

That sort of thing has been widely publicized. You have there the complete story. You built the dam on the main stem and you have done some of the work upstream, and the people have seen the results of it. Down my way the people like what they have seen upstream a lot better than that on the main stem.

Neither the Department of Agriculture nor anybody else could go out there now and tell them that that is not the wise thing to do. They don't need the advice of Congress, or the Government, or anyone else, to convince them that what they have already seen is a good thing. As long as you have that sort of thing to back it up I think you are going to find the views of a lot of people are going to grow that the upstream conservation idea is something very vital and something which should be pushed ahead much faster than it has been.

Mr. DAVIS. Will the gentleman yield?

Mr. STEED. Yes.

Mr. DAVIS. Do you people feel that that dam should not have been built?

Mr. STEED. That argument, of course, has all long since been settled. It was done. There was a lot of opposition to it when it was built, but the people who lost that argument long since have moved out and found home somewhere else. Now that we have it we would like to keep it as long as possible. We do not like to see it filled up with dirt.

Mr. DAVIS. One other question. This work down here as shown by the map here, has this retarded the siltation at the dam in your judgment?

Mr. STEED. It has not to a great extent because it is such a small part of the whole drainage area. But to the extent it can work it has done it very markedly because you can watch where the water from Sandstone Creek empties into the Washita. The Washita waters are muddy. The waters of this creek are clear. You do not need any measuring device there. You can use your eyes.

No; there is less mud going out of the Sandstone or Cloud Creek area than there is generally. When you have a cloudburst on an experimental project like that and the creek does not go out of its

banks, and that is widely publicized and seen by many people, there is no question in their minds about the effectiveness of it.

Secretary BRANNAN. I do not know how this makes your record look, Mr. Chairman, but I would like to have Mr. Davis see these two kinds of things—and the members of the committee.

There is a picture of one of those dams and here is another picture. [Shows photographs.]

Mr. STEED. What I wanted to conclude with is by saying that I think most all of the controversy in the public mind stems from a lot of this sort of information. The general citizen may not be an expert on the over-all comprehensive flood-control program, but he is more interested in what he can see and find out about at home.

Insofar as public opinion out there is concerned, the upstream conservation side of it has come into very strong favor.

Secretary BRANNAN. Mr. Chairman, I would just like to say this: Without this kind of work this country is not going to be able to feed itself indefinitely. That is all.

Mr. DAVIS. I could say that further emphasizes that the whole program is complementary and supplementary.

Secretary BRANNAN. Certainly, Mr. Davis.

Mr. STEED. Here you have a dam in the Washita project which is absolute proof that one has to go with the other if you want to use common sense.

Secretary BRANNAN. Those big dams and on-channel structures will last five or six times longer if we can do this kind of work behind them.

Mr. STEED. I think you will find the Army engineers are very alarmed themselves at the rate of siltration at the Texoma Dam because it has been faster than they expected it to be, because with no soil-conservation practices upstream as time goes on the erosion accelerates and it does not stay at a level. Unless something is done to check it to the damage will grow more and more each year.

Secretary BRANNAN. Mr. Chairman, would you want me to try to put my finger on the real problem as I see it from an administrative point of view?

Mr. JONES. Yes, Mr. Secretary.

Secretary BRANNAN. There has long been the view, and I think some of the Corps of Engineers entertain this point of view and some of the Bureau of the Budget people entertain this point of view, that because the things that are done on the farmer's land are very similar to the types of things which the Department of Agriculture has been responsible for ever since its inception, that therefore—it is not necessary to include the Department as a full partner in full membership in flood-control work; that we just go on doing the kind of job we have been doing with the Soil Conservation Service, the Forest Service, the Production and Marketing Administration, and our research people, and that somehow or other eventually we will get that job done. Then eventually the picture will be as we keep saying it ought to be or ought to start out to be from the very minute we go into an area to do a major engineering and flood-control job.

However, that is not true. The funds which build these kinds of dams we do not have and never have had; nor the authority to make it available in the amounts and quantities which are necessary to do

the full-scale job that has been done in this area. Therefore it is not sufficient just to say to the Department, "Well, you go on and do your job and you will catch up with us in due course." We have to be in on the ground at the time it is decided by the Congress that we are going to concentrate our effort in flood control, flood prevention, and preservation of resources in a given area. We simply have to step in and accelerate the work on the areas back of those dams or those dams are not going to be nearly effective or efficient as they were intended to be.

I will say very frankly to you, if and when we can do behind a large reservoir a considerable portion of this kind of work, the Corps of Engineers will have a new set of criteria upon which to base their construction of the on-stream structure because they will know more about the possible runoff. Even in the abnormal years they will know about the siltation flow, that is, the flow of silt that comes into the dams, and will even know some of the other things that will make an on-channel engineering job a different job than they are doing now.

That is the reason why we are saying you have to get in here and do this part of the job at least partially concurrently with the on-channel work. When we get to moving as a team in that fashion I think we will be giving the American taxpayer more for his dollar of flood control than he has ever had so far.

Mr. JONES. Mr. Secretary, you say that if those works which you speak of are performed and the program is carried out, then the Corps of Engineers by a restudy will know more about what type of structure to place in the mainstem in the works they are to do. Are you speaking now of initial works, or after the completion of a 10-year program such as you have in the Washita?

Secretary BRANNAN. I am talking about the work to be done in the future. Largely they are all set to go to work in the Missouri Valley, but there are other valleys all over the country where they are doing no work of any consequence. In those areas, from the experience we have had here, they are going to be able to plan and engineer their structures better in those other areas. I am not saying I think they ought to stop any of their engineering structures now until we catch up with them, or until we are able to give them the information which will be learned from this kind of understanding. But I say some day there will even be a better understanding of the on-channel structures because of the experience that will be gained from the installation of these kinds of works.

Mr. JONES. The reason I continue to discuss the Washita is that as I understand it that is the most complete project that you have undertaken to build.

Secretary BRANNAN. This is one of four or five in the country that are pretty near complete. Yes, sir.

Mr. JONES. Under what legislative authority did you proceed to do that work?

Secretary BRANNAN. Under the Flood Control Acts. It is flood-control money which pays for those dams.

Mr. JONES. In the 10-year program, what will be the total cost of the Washita project?

Secretary BRANNAN. I do not carry that figure in my head. Mr. Brown, do you have it?

Mr. DYKES. About $60,000,000 for this type of program over the whole Washita area.[1]

Mr. JONES. $60,000,000?

Secretary BRANNAN. Yes, sir.

Mr. JONES. What amounts are required to do the capital works?

Secretary BRANNAN. Mr. Dykes, or Mr. Brown, would you come up?

Mr. DYKES. You mean the major Army structures in the Washita, or are you talking about this type of activity?

Mr. JONES. I am talking about all the dams and all capital improvements excluding land-management moneys that are required in the Washita.

Mr. DYKES. Of this $60,000,000 required for the entire Washita program around $40 million of it will go into these retention structures by the Department of Agriculture. So far as I know the corps has not yet presented to the Congress its program in the Washita. It has been under discussion for some time, and the last figure that I heard was 11 major structures in the Washita at a cost of $140,000,000. We are at the present time trying to work out and reconcile a program that would take into account our works along with the corps' works. They are still in the preliminary planning stage as far as the Washita is concerned.

Mr. JONES. Mr. Dykes, in order for us to get the record straight, at the time the estimate of the Corps of Engineers was made, the cost was around $6,000,000, for one retention dam in the subwatershed. If there has been a revision of that survey I am not familiar with it.

Mr. DYKES. I am only pointing out, Mr. Chairman, the discussions that have been going on the last year or two concerning the corps' program on the Washita and their laying it on the line with us as to what they propose to do as far as the Washita River is concerned. It is still in the survey stage as far as the Army is concerned.

Mr. JONES. Of the $60,000,000, $40,000,000 will be required to make capital improvements. As to the other $20,000,000 additional, how will it be spent?

Mr. DYKES. It will be spent in assisting and giving technical asssistance to the people in the conservation program on the land. It will be spent by the farmers themselves in installing that conservation program on the land. It will be spent by the counties for revising highways and culverts and bridges; and by the State highway department and other people in the watershed in getting the rest of the program on the watershed.

Mr. JONES. Will those payments be made to the farmers in the from of ACP payments?

Mr. DYKES. The $40,000,000?

Mr. JONES. No. The difference between the 40 and 60.

Mr. DYKES. The $20,000,000, Mr. Chairman, is totally a Federal cost. Also these are the contributions of the State, the county and of the farmers themselves in installing the conservation program on the land.

Mr. JONES. We are talking about the Federal program, so let us confine our figures to just the Federal program. What is the cost

[1]This figure and those given in the testimony of Mr. Dykes were corrected in the testimony of April 23, 1952. See p. 236.

to the Federal Goverment for the comprehensive program on the Washita?

Mr. BROWN. The discussion has centered around the review survey report on the Washita which the Department now has under consideration, which is now in the Secretary's office being reviewed. This $40,000,000 capital expenditure is to carry out all over the entire basin, the type of program which the Secretary has pointed to at Sandstone Creek. This Sandstone Creek is an area of about 100 square miles. That represents approximately $1,000,000 worth of capital improvements. Under the present authorization granted in the Flood Control Act of 1944 there was no authority for ACP payments.

In the review report which Mr. Dykes was referring to there will be provision for ACP payments for technical assistance and for educational assistance in carrying out this program. There is at the present time a substantial amount of help going to the farmers in carrying out the land treatment phases of the program as shown in these photographs here from ACP regular program funds. There will be a provision in the review report, however, for accelerating the amount of assistance in order to get this job done within a specified period of years.

Mr. JONES. Now give us those figures.

Mr. BROWN. Well, sir, the $60,000,000 is approximately the Federal cost. We would be glad to put that in the record for you exactly, but that is approximately the Federal cost. Approximately $40,000,000 is the cost of the structural work.

Mr. JONES. $40,000,000 is the structural work cost to the Federal Government without any contribution from local, State, or others?

Mr. BROWN. There is another $15,000,000 in there representing the local contributions.

Mr. STEED. Mr. Chairman, right at that point, could they give us the total number of acres in the whole program that would be involved in this $60,000,000?

Mr. JONES. I understood there were 47,000 acres.

Mr. BROWN. No, sir. That is just in this one watershed—4,700 acres.

Mr. MACK. Is it 4,700 or 47,000?

Mr. BROWN. In this one watershed, the flood plain is 4,700 acres, but this is a 100-square-mile watershed totaling about 64,000 acres. In the entire Washita River drainage area, one small segment of which has been completed to date, there is something like 5,000,000 acres, of which this is 64,000 acres in the total Sandstone Creek.

Mr. JONES. Let us go back and start all over again and see if we can come up with some figures. You say the entire Washita will require an expenditure in Federal funds in the amount of $60,000,000. Is that correct?

Mr. BROWN. Approximately.

Mr. JONES. For all the area, that is, all the Washita River drainage area?

Mr. BROWN. Yes, sir. 5,000,000 acres.

Mr. JONES. That is going to cost $60,000,000. Of that $60,000,000 $40,000,000 will be spent on capital improvements. Is that right?

Mr. BROWN. That is right.

Mr. JONES. The other $20,000,000 will be split between administrative costs in the field, technical advice to the individual farmers, and I presume through the land-grant colleges, and so forth.

Mr. BROWN. That will go into the land-treatment program. Yes, sir.

Mr. JONES. How much of that $20,000,000 will be paid directly to the farmer for his participation in the cooperative program?

Mr. DYKES. Gentlemen, this Washita review program is still in the study stage. We are not at the moment ready to present it to Congress and we do not have the exact figures, but we would be glad to supply our perliminary figures on that to the committee. I would hate to hazard a guess as to how much would be paid to farmers through ACP. At the moment it would be just a pure guess and you could insert any figure at this time.

Mr. JONES. That brings me to the point which I am trying to get, a figure that we can charge directly to flood control and make separable land management expenditures by the Federal Government. I want that because on some of these programs there is a 10-year program, and in estimating the ratio of costs to benefits it is necessary for us to consider that such a program requires the expenditure of funds over a 10-year period.

There is a great deal of conflict existing here in the Congress on the point that the Committee on Agriculture should be the committee exercising the jurisdiction over land management programs. Certainly we in the Public Works Committee want to respect their jurisdictional rights so that we handle flood control and they handle land management.

If we could come up with some policy with respect to the different categories of works, we might reconcile a great many arguments that persist here; and, Mr. Secretary, sometimes in the Department of Agriculture itself.

Mr. MACK. Mr. Secretary, before we get away from the Washita Basin how much of this 5,000,000 acres is subject to being flooded? All of it or only a small part?

Secretary BRANNAN. That which is outlined in yellow here.

Mr. MACK. This is only 4,700 acres. I am talking about the 5,000,000 acres. How much of the 5,000,000 acres is subject to being flooded?

Mr. BROWN. Right close to 10 percent of that is subject to flood. The flood plain area there is almost 10 percent of the total land area of the basin.

Mr. MACK. In other words, these works that cost $60,000,000 will give protection to about 500,000 acres, or at a cost of about $120 an acre?

Secretary BRANNAN. They give protection to the whole watershed.

Mr. MACK. You mean downstream, from floods.

Secretary BRANNAN. Upstream. Of course, incidentally downstream, but it gives protection to the whole area.

Mr. MACK. I thought 90 percent of this land was not subject to being flooded.

Secretary BRANNAN. That is correct, but it is subject to eroding and destroying the other 90 percent.

Mr. JONES. May we go back now? Do you have any suggestion, Mr. Secretary, as to how we could make the delineation between flood control and land management control in relation to flood control?

Secretary BRANNAN. Mr. Chairman, I do not think that you can divide them like black and white. Land management includes flood control. Flood control includes land management. You made reference a moment ago perhaps to a jurisdictional dispute between this committee and the Committee on Agriculture. I think that can be reconciled and is not unlike or not of any more intensity than the differences of opinion between the Corps of Engineers and the Department of Agriculture.

Mr. JONES. I think that observation is certainly sound.

Secretary BRANNAN. We are just talking out loud amongst ourselves to try to reconcile these things and try to get them to understand some things that they are not accustomed to devoting their attentions to, and they are doing the same for us. I imagine that takes place between your committees. But let me say this: The search for an exact division of authority seems to me to be not at all necessary. It seems to me once the Congress says, "We are going to intensify our flood-control work in a particular area," that means we are going to intensify all of the things which contribute to that flood-control work. Much of that intensification must be done on the land where the water falls—where it first strikes the earth in the first instance. Every drop of water that is behind one of the big dams fell out on the land on a farmer's land, probably in the first instance, and when it started on its way to that dam it began to gully and cut the earth. It picked up part of the top soil which was needed there and has taken it to a place where it was not needed and is not wanted.

Actually, it seems to me in the area of the appropriations the problem can be solved easily. Then, Mr. Chairman, all you need to do is to call upon the people who are best adapted and best equipped and who are the experts in the particular type of work you want done. You decide what the total job is and then you go to the people who are expert in getting it done.

That is the only reason why the Department of Agriculture is constantly in this business. We work with these farmers. There is a farmhouse near almost every one of those dams I pointed out to you in that map. We work with that farmer. We extend him credit. We extend him all the technical assistance and guidance necessary in improving his farm operation and all the research and the new varieties of grass, and everything else he uses, has been developed in the Department of Agriculture. The way he is going to do all the work behind that dam is the technique for which there is now an organization working, and it is out there in the field.

Therefore it seems to me what you really have, if it is a dispute or conflict at all, and I do not think it is, is simply deciding that we want to get this job done.

Mr. JONES. We have not had that conflict, Mr. Secretary, from 1936 until this past year—the first of the year. They say that here is a field in which there should be realinement of work as far as the Congress is concerned and they should be the repository for all agricultural work that pertains to land management.

Secretary BRANNAN. Mr. Chairman, let me just say this: Certainly on a simple efficiency of operation basis, is it not better for the flood-control people, the person whose mind is only concerned with flood-control problems, to go out and employ the Department of Agriculture if you want to put it on an employment basis, to do this kind of work rather than to set up in the Corps of Engineers, as the Bureau of Reclamation has been attempting to set up within their structure, a whole group of agricultural economists? We cannot supply the needed agriculturally trained people on the jobs we need to do in the United States.

Mr. JONES. It is not the intent of this committee to have the Corps of Engineers carry out any agricultural program.

Secretary BRANNAN. If you start on that premise and then accept the principle that there is work to be done on the land, on the farms, concurrently with the man's operation of the farm which has a contribution to make to flood control, then it seems to me the answer is simple. You just get a fellow who is out there working.

Mr. JONES. Is your thinking subscribed to by all the people in the Soil Conservation Section?

Secretary BRANNAN. Let me say this, Mr. Chairman: If everybody agreed precisely with me in the Department of Agriculture, we would just reduce the staff to me and my secretary.

Mr. JONES. But you have a single policy with respect to these programs.

Secretary BRANNAN. Yes, sir; and I believe the people in the Department of Agriculture will adhere loyally to it.

Mr. JONES. I hope you did not infer from my question that everybody in the Department of Agriculture had to subscribe to all your thinking pertaining to all of the agricultural problems. I am speaking of the policy of the Federal Government and not of what somebody thinks down there about Timbuktu or kangaroos. I am talking about a policy of the Federal Government.

Secretary BRANNAN. I believe they do adhere to it, and if they do not you point it out to me and we will rectify it.

Mr. JONES. I think we have come to an understanding and I hope that we share it with all the Department with respect to these things being agitated. No committee of the Congress could be more responsive to its obligations with respect to flood control than the Committee on Public Works. This is attested to by the fact that we have passed over 1,000 survey resolutions to be carried out for the Department of Agriculture. Certainly we share the same anxieties and the same hopes, Mr. Secretary, that you share. We hope to get it done.

However, there is this problem which we must eventually face. That is the fact that we must reconcile the program in the Missouri River Basin to the fiscal policy of the Federal Government. To carry out the projected work on a 1947 estimate would cost between eight and nine billion dollars. So those programs are going to be expensive.

What we are trying to come up with is a wise, sound policy that will propose a good investment for the American taxpayer and that will insure the greatest return.

Secretary BRANNAN. Yes, sir.

Mr. JONES. So that is a problem that we here are endeavoring to approach. We do not care about agencies so much as we do about

the function of that agency in carrying out its responsibility. Certainly if there is a shoe on the wrong foot up here in Congress we want to change that. We want to get an orderly work program in which the people of this country understand and comprehend that the Federal Government shall be diligent and vigilant in carrying out the works required to protect the future economy of this country. That is what we are seeking to do.

Secretary BRANNAN. Well, Mr. Chairman, let me reassure you, sir, and the members of the committee, that we have always felt that was your attitude. We felt that this committee has been friendly to the agricultural work, and we are not in anywise here in an antagonistic frame of mind at all. We certainly believe that the kind of thing I pointed to here in the Washita is one of the most significantly important things that is going on in the United States today, and anywhere in the world today, in terms of the welfare of mankind. To the extent we can become greater experts in that kind of work, just so much more certain is there hope for a good world in perpetuity.

Mr. SMITH. Mr. Secretary, the conflict which, as you pointed out, you have not kept promoting and which the policy of the Department has not been to help promote, which is the conflict about the way to help solve the flood-control problem in the Kansas River Basin, is evidenced by the report of the Appropriations Committee which resulted in delaying work on that program. Do you not think the executive agencies could do more to attempt or to make it clear that there is agreement on the program out there? The Congress has been blamed by the executive department for failure to act on that program, and I think the Congress should be properly blamed for not acting fast enough on that program out there. Yet the opponents of the program are able to point to this conflict, and what has happened in the Missouri Basin could happen everywhere else.

Secretary BRANNAN. Mr. Smith, I think if we went to the very people who testified that there was conflict and who maintained that there was conflict and said, "You are wrong. There is no conflict. Read our testimony before Mr. Jones' committee today," they would still maintain that there is conflict because conflict is the tool with which they got done what they wanted to do, namely, stopped the building of the reservoir. If that tool does not work, they will drop that one and use another one.

Mr. SMITH. I realize that they use whatever tool they can, but this is one we ought not to have so handy for them.

Secretary BRANNAN. I will say to the committee we will certainly do every reasonable thing we can do to clarify for anybody who might be misinformed about our attitude on the on-channel works, just what our situation is. I want to make it clear, Mr. Chairman and gentlemen of this committee, that I have from the very beginning said we are not the Government's engineers. We have never attempted or had any inclination to want to do the engineering job of the flood-control work. We think we know the agricultural and the land-treatment part of this job.

As for these things being engineering, they are only engineering in a very minor way. A local contractor in the neighborhood puts up those reservoirs under the supervision of the Soil Conservation Service people or the Forest Service people. As you can see from that map,

Mr. Davis, that is not a great engineering enterprise. There are no piles in there. All that is needed is a dragline, a couple of good bulldozers, and maybe a couple of carry-alls, and they probably face that with rock, and there they have a good dam.

Mr. SMITH. If that is what they have in the Little Tallahatchie, they cost four or five thousand dollars; do they not?

Secretary BRANNAN. Yes. I would say maybe an average of 10, or in that range. Isn't 10 about right?

Mr. DYKES. No. That is a little low.

Secretary BRANNAN. What would you say the average is?

Mr. DYKES. I would say 25.

Secretary BRANNAN. For that area?

Mr. DYKES. About 25 in that area.[1]

Mr. SMITH. That is bigger than Tallahatchie, which is four or five.

Mr. DYKES. They are a little larger, Mr. Smith.

Mr. DAVIS. May I ask a question?

Mr. Secretary, this is so academic, I hate to ask you. Let us say my farm is here and under your program you say we should put this there. As you recall, you said that I would as a formality be expected to lease that piece of land.

Secretary BRANNAN. Just give an easement on it.

Mr. DAVIS. An easement?

Secretary BRANNAN. Yes.

Mr. DAVIS. Then I would have to give the right for ingress and egress.

Secretary BRANNAN. To get to it. You would also have to agree to maintain it after it was built.

Mr. DAVIS. I would have to maintain this dam.

Secretary BRANNAN. After it was built.

Mr. DAVIS. As an individual farmer.

Secretary BRANNAN. Yes, sir.

Mr. DAVIS. Would the Government with its funds actually build the dam at Federal cost?

Secretary BRANNAN. The Government will go with you, Mr. Davis, to a local contractor, or take a group of local contractors and take a bid from the local contractors. The local contractor will build the dam, and when it is finished the dam will be paid for by the flood-control funds.

Mr. DAVIS. Flood-control funds?

Secretary BRANNAN. Yes, sir.

Mr. DAVIS. That is very basic and very simple, but I start from the bottom and work up on this thing. I get your point. So the Federal Government pays for it. After this is bid by a local contractor he is given the job. It is ordered done and the Federal Government out of flood-control funds pays for the dam. But as an individual farmer or property owner I will have to maintain that dam once it has been built, at my cost.

Secretary BRANNAN. Yes, sir. May I point out two other things? Before we allow that dam to start being built you will have to observe and do the rest of the things that need to be done, such as on the little watershed back there.

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[1] Average installation cost (Federal plus non-Federal) of floodwater retarding structures and drop structures in the Washita watershed is approximately $38,000 each.

Mr. DAVIS. That is this part.

Secretary BRANNAN. That is that part but also that part. [Showing photograph.] You will do your contour work.

Mr. DAVIS. This you call land management, do you not?

Secretary BRANNAN. Well, land management, in that particular case, is just making that field productive. That's all. That was unusable land. Today it is a productive field.

Mr. DAVIS. In other words, I would have to agree to accept the technical advice, counsel, and assistance from your Department as to what should be done. In other words, how to plow this land and make the contours, and so on.

Secretary BRANNAN. Yes. We do not tell you how to do it but we come in and say that this is the way to do it. If you have a better way and can convince your soil-conservation-district supervisors—not just the Government but your soil-conservation-district supervisors, that yours is better, then that will be the plan. They are your fellow farmers.

You see, here is one, Mr. Davis, under a dam. That land has been all treated below it. That is below the dam. That is now good alfalfa land whereas it was not producing anything before.

Mr. DAVIS. Mr. Secretary, I think this water finally could overflow. Will the Government build a way to bring that water downstream?

Secretary BRANNAN. You put your finger on it. You see the lighter area. You just move your finger a little further. That is a grass runway.

Mr. DAVIS. I see, Then this water will eventually find its way down to this point.

Secretary BRANNAN. Yes. It does go on down that way, or comes on down here and goes down that little stream by the side of your field.

Mr. DAVIS. Then it will be so controlled that there would not be damage resulting from this overflowing without control over this flooded area.

Secretary BRANNAN. Yes. And, Mr. Davis, the farmer built little check dams in here. Or if it drops rapidly he will build a small cement drop so that if the water falls it will not wash the land away.

Mr. DAVIS. You know, this has been very valuable to me, Mr. Secretary. I listened to you very carefully. I can see where we ought to do more selective treatment. In other words, where this great damage is being done, if we could concentrate our efforts in places like that I believe we would get along further rather than just to shoot it like bird shot all over the country. If we could take the real hot spots and go in there with an integrated program, with everybody working together as a team, then I believe we could really make more progress than if you just throw your shots wild.

Secretary BRANNAN. Mr. Davis, I just hope sometime you could go into the Washita area one time, or one or two of these others, and just talk with the farmers there. They are as enthusiastic about that enterprise as anyone could be. You could no more take it away from them than anything else you could humanly do.

Mr. GEORGE. What is the average annual rainfall in that valley?

Mr. DYKES. About 20 inches in the Sandstone area of the Washita.

Mr. GEORGE. It is 20 inches in central Kansas.

Mr. STEED. There have been years, have there not, Mr. George, when the rainfall has been 40 or 50 inches?

Mr. DYKES. You may get that rainfall all in one rain, too, Mr. Steed.

Mr. JONES. Mr. Secretary, it is the plan of the subcommittee to visit the Washita River, we hope, in the next 30 days, and see the works at first hand.

I recall when you were making your formal presentation, Mr. Secretary, that I directed an inquiry to you which I think you misunderstood. That is on page 21 in the first paragraph. I made the inquiry as to whether or not in the allocation of costs you impose on waterborne transportation a cost that would contribute reimbursement to the Federal Government. For instance, on the Missouri River, do you think when you make improvements in navigation that the waterborne traffic should bear part of that cost?

Secretary BRANNAN. You mean in the form of tolls?

Mr. JONES. Yes.

Secretary BRANNAN. Well, what I have said here, of course, Mr. Chairman, is that in appraising the over-all justification for the undertaking you allocate—and use the term here "allocate"—to the various end purposes their proportionate share of the cost. We say that as far as transportation is concerned on the main stream, if it is benefited, that that should be reflected in the report. Whether or not you ought to put toll charges on barge traffic, Mr. Chairman, I am not prepared to say. That is a very, very complicated question.

Mr. JONES. I had not made myself clear when I made that inquiry, and that is the reason why I wanted to go back to it.

Secretary BRANNAN. I was thinking in terms of allocated rather than in terms of charging the user.

Mr. JONES. As I understand you, Mr. Secretary, your contention is when there are separations of costs in a multiple-purpose project where the benefits are flood control, navigation, hydroelectric power, and reclamation, each one of those factors of cost should be reimbursable to the item of that cost. Is that correct?

Secretary BRANNAN. Yes. To the purpose for which it is installed.

Mr. JONES. And that should be the basis for the economic justification of a project?

Secretary BRANNAN. That is right, sir.

Mr. JONES. In other words, if there is reclamation the reclamation costs should not become a part of the hydroelectric costs?

Secretary BRANNAN. That is right.

Mr. JONES. Therefore, the charges made on electricity should not reflect a burden of the irrigation and reclamation works carried as a part of that cost.

Secretary BRANNAN. That is right, sir. Mr. Chairman, just to make this completely clear, as we go along in the development of major land-reclamation undertakings we get deeper and deeper into the kind of project in which the public benefit begins to increase the value over the specific individual benefits. I can take you from my home in Denver and in an hour's drive show you a project which the farmers themselves could do, and which has served them ever since they built it in the late 1800's. They needed no Government help. All they had to do was build a little dam across the river and bring the water down to their lands by gravity. There was no public benefit at all. That was their own personal benefit. Then you go on to the so-called Carey Act types of projects which were authorized for a

while in which you began to get a project which cost a little bit more than the immediate benefits could support. Therefore the State got into the enterprise and helped to finance it after a fashion.

Now we have progressed to the bigger and the more difficult and the more expensive ones, and I think we ought to face the fact that now the great projects to be built in this country cannot be paid for simply by the direct services which they render. There are over-all public services which are more important.

I say to you for a certainty that the cost of developing water for a specific acre of land, when it runs to $1,000 or in that area, cannot be borne by that land and be paid out except if you allocate it over four or five generations of people.

Therefore you look at it and see there is a real public interest in putting more land into cultivation and therefore part of this money must just be charged off to the public interest, and that is all. Call it subsidies; call it any other thing; it is a part of the cost of making that piece of land more useful, which the owner of the piece of land cannot sustain.

The same is true in power, and the same is true in some of the other areas. As we moved forward from 1900 we got into these kinds of projects.

Mr. JONES. We are gratified that you could come, Mr. Secretary. We have two other witnesses appearing from the Department. If there is need for you to return we will certainly try to arrange it.

Secretary BRANNAN. I shall be very happy to return, Mr. Chairman.

Mr. JONES. Let me thank you for the committee as well as for myself. The committee will adjourn.

(Whereupon, at 12:30 p. m., the subcommittee adjourned until 10 o'clock the following day, Wednesday, April 23, 1952.)

STUDY OF CIVIL WORKS

WEDNESDAY, APRIL 23, 1952

COMMITTEE ON PUBLIC WORKS,
SPECIAL SUBCOMMITTEE TO STUDY CIVIL WORKS,
Washington, D. C.

The special subcommittee met, pursuant to adjournment, at 10 a. m. in room 1302, New House Office Building, Hon. Robert E. Jones, Jr., presiding.

Charles D. Curran, staff director.

Mr. JONES. This morning we have scheduled Dr. Salter. He has been called out of town, however, and Mr. Dykes is representing him.

Mr. Dykes, we are delighted to have you.

STATEMENTS OF J. C. DYKES, DEPUTY CHIEF, SOIL CONSERVATION SERVICE, DEPARTMENT OF AGRICULTURE; AND CARL BROWN, SOIL CONSERVATION SERVICE, UNITED STATES DEPARTMENT OF AGRICULTURE

Mr. DYKES. Mr. Chairman, I am J. C. Dykes, Deputy Chief of the Soil Conservation Service. I believe Dr. Salter expressed his regrets to the chairman yesterday that he had to leave after the session yesterday and could not be here today. He asked me to express his regrets to the committee.

This prepared statement reads:

It is a privilege to appear before your committee to explain the responsibilities that have been delegated to the Soil Conservation Service in formulating watershed programs and installing authorized works of improvement. Secretary Brannan has pointed out in his statement that primary responsibility for departmental activities under the Flood Control Act of 1936 has been assigned to the Forest Service and Soil Conservation Service. Assistance is provided, however, by the Production and Marketing Administration in determining and administering the direct aids needed to assure the installation of land-treatment measures, or conservation practices on farms and ranches. The Extension Service determines and provides educational assistance and the Bureau of Agricultural Economics gives consulting help in economic evaluations.

If you will permit me, I would like first to give you a very brief summary of our philosophy in the Soil Conservation Service concerning the role of watershed treatment in flood prevention and control.

We believe that the attack on flood-damage prevention must begin where the rains fall and the runoff starts—that is, in the fields and pastures and forests, and that it can end only when the runoff has safely reached the ocean. We believe wholeheartedly in coordinated planning and treatment of entire watersheds and drainage basins in cooperation with the Army Corps of Engineers, with soil-conservation districts, with watershed associations, and with all other Federal, State, and local agencies that have a responsibility in land and water management.

Our job in the Soil Conservtion Service is, first of all, to assist landowners and operators to use their land within its capability, and to treat it with sound conservation practices in accordance with its needs; that is the first step in flood prevention. Beyond this, our job is to assist organizations of local people to install upstream flood-prevention measures, such as small retarding structures, guly plugs, and channel improvements. If, through such a program, we can cause the water which falls on the lands in the upper watersheds to delay its race to the sea, we have completed an essential part of the total job of flood prevention and control.

But this kind of program alone will not prevent occasional flooding of the main river valleys and the cities in them. Additional controls such as reservoirs, levees, and other main-channel protective works will be needed to safeguard the flood plains of our major rivers against such disasters as we have experienced last July and again this month in the Missouri River Basin. This main river job is the responsibility of the Corps of Engineers, which has ably fulfilled its responsibilities for more than a century.

NATURE OF DEPARTMENT'S WATERSHED PROGRAMS

In carrying out our responsibilities for formulating watershed programs and installing authorized works of improvement, we keep constantly in mind that in most of the smaller to medium-sized watersheds such as the Washita River in Oklahoma, Salt-Wahoo Creeks in Nebraska, or the Green River in Kentucky, 75 percent or more of the total flood damage is caused by smaller floods of the kind that occur, on an average, more frequently than once in 10 years. In other words, they are the year-by-year floods that receive only local notices, not widespread headlines throughout the entire country such as are given to the flood now occurring in the Missouri and upper Mississippi River Valleys, Not only does a major part of the damage in the smaller and medium size watersheds come from frequent small floods but, as the Secretary pointed out, an estimated three-quarters of the Nation's total flood damages occur in such watersheds.

If these smaller floods in tributary valleys could be reduced to the point where overflow on most of the bottom lands would not occur more often than once in 10 years, the flood risk to agriculture there would then be more nearly comparable to other agricultural risks with which farmers are constantly confronted. Our first and primary objective is to accomplish this.

More than 5 percent of the total agricultural land of the Nation lies in the flood plains of small tributary valleys. There is more land subject to recurring flood losses in these small valleys than all the remaining land that can be brought under irrigation with the available water supply in the 17 Western States. One of the largest potential sources of increase in agricultural production, which will be acutely needed in the next 25 years, can be brought about through protection of these small tributary valley lands. This kind of land, in the main, is potentially the most productive land we have, and least subject to erosion damage. Moreover, the protection of this land against excessive floodwater and sediment damages can be achieved, on an average, at less cost per acre than the addition of new land through irrigation or, in many cases, at a less cost than by land clearing. Only the potential increase in production on upland farms, as a result of the application of soil and water conservation measures and improved technology, which is the core of our watershed improvement programs, exceeds in value the benefits to be expected from protection of small valleys against the hazards of frequent flooding.

Watershed improvement programs designed primarily to protect tributary valleys against overflow from smaller floods will, however, provide some benefits to main river valleys. Some of the smaller floods in the large valleys may be essentially eliminated and some reduction may be made in the extent of the larger floods. Watershed programs will have only relatively minor effects, however, on the disaster-type floods such as those experienced in the main Kansas and Missouri River valleys last summer and this month. Our program will have a major effect, however, in reducing the high rate of silting in many downstream flood-control reservoirs, thus preserving them for future generations.

Coordinated watershed planning to prevent or control all types of floods and give protection to farmers and city folks alike will require, as we see it, three principal types of operations, each coordinated with the others in point of time and balanced in terms of public financial resources made available. They are:

(1) Land treatment. Land-treatment measures such as contour cultivation,

terracing, cover crops, and woodland management prevent erosion, maintain soil fertility, conserve water by storing it in the soil, prevent damage on the farm from the erosive action of rainfall and runoff, and reduce the sediment loads of creeks and rivers. Land-treatment measures are already being rapidly installed by landowners under the programs of the locally organized soil conservation districts, aided by technical assistance from the Soil Conservation Service as well as by educational assistance and direct financial aids. The rate of assistance provided needs to be stepped up, however, to achieve more rapid protection of watershed areas.

(2) Upstream waterflow retardation and channel stabilization. This phase of watershed improvement involves work by the Federal Government and cooperating State and local agencies on the tributaries and smaller waterways to control or retard runoff from neighboring farms. These measures, such as small retarding structures, gully plugs, and channel improvements, which are installed largely by contract, alleviate damage to the agriculture of the smaller watersheds above the downstream engineering works. They slow runoff and stabilize sources of sediment in upstream channels. They represent water-control operations over and above what is ordinarily done through the farm-land conservation job.

(3) Downstream flood-control measures. These are the large reservoirs and levees constructed on the major waterways to control flood flows in the major river valleys. Such measures alleviate urban and agricultural damages from major floods lower down the main rivers. This work is the responsibility of the Corps of Engineers.

There you have, as we understand it, a coordinated approach to flood prevention and control—a program that protects the farmer or rancher of the uplands as well as of the lowlands, and the upstream bottom lands and the downstream cities, as well.

Let me return now for a moment to the question of the relative effects of these three phases of the total job. The first part of the three-part job is land treatment. The larger the storm or flood event, the less relative effect a land-treatment program alone will have. Let me illustrate this from the results of careful studies on our watershed experiment station at Waco, Tex. These research studies carried out there during the past 15 years show that the peak rate of discharge from a 300-acre watershed, for a flood of 2-year frequency would be reduced 27 percent by a land-treatment program. For a 5-year flood, the reduction would be 16 percent; for a 10-year flood, 12½ percent——

Mr. JONES. May I inquire at that point? Do you have any studies of any other area than the Waco area?

Mr. DYKES. We have three of these stations, Mr. Jones.

One at Hastings, Nebr.; one at Coshocton, Ohio; and one in Waco. We would like to have others, but our research funds simply do not permit us to operate any additional hydrologic stations.

Mr. MAGEE. Mr. Dykes, may I inquire, when you say for a 5-year flood the reduction would be 16 percent, do you mean you take an average over a 5-year period?

Mr. DYKES. No, sir. A 5-year flood is the size of a flood that would occur once in 5 years.

Mr. MAGEE. I see.

Mr. DYKES. As opposed to a flood that would occur once in 25 years. That is a term we use to designate how frequently we get a flood of a certain magnitude—

for a 25-year flood, nearly 10 percent; and for a 50-year flood, about 8 percent.

Using data from many research stations maintained for a good many years past by the Department of Agriculture, we are able to predict, within a reasonable degree of accuracy, what a land-treatment program will do on any watershed throughout the country. For example, in our evaluation of the watershed program on the Grand (Neosho) River, recommended in a survey report which is now before your committee, our analyses have led to estimates that on South Cottonwood Creek, a tributary area of 51.8 square miles in Marion County, Kans., the recommended land-treatment measures alone would reduce the peak discharge of an annual flood by an estimated 45 percent; of a 4-year

frequency flood, by 13 percent; of a 10-year flood, by 7.5 percent; and of a 50-year flood, by 5 percent.

In the light of these data, we have, in order to provide a higher degree of flood protection in the headwater tributary valleys, included in our program for the Grand (Neosho) watershed a series of small upstream waterflow-retarding structures. In South Cottonwood Creek, the proposed retarding structures would reduce the remaining peak discharge of annual floods by about 16 percent, after the recommended land-treatment program had reduced the peaks by 45 percent. The retarding structures would, however, result in a 33 percent additional reduction in peak flow for a 4-year flood, 38 percent for a 10-year flood, and about 41 percent for a 50-year flood.

Mr. JONES. May I inquire at that point? I do not like to interrupt you, but how do you account for the increased percentages in reduction with an increase of rainfall?

Mr. DYKES. Are you talking about the retarding structures now, Mr. Jones?

Mr. JONES. Yes, sir, I am talking about the retarding structures. You say:

> The retarding structures would, however, result in a 33 percent additional reduction in peak flow for a 4-year flood, 38 percent for a 10-year flood, and about 41 percent for a 50-year flood.

It seems the ratio would go down instead of increase.

Mr. DYKES. I think, to understand the reduction in damage that would result from that retarding structure, I should say the retarding structure has a draw-down tube through it.

Mr. JONES. Yes.

Mr. DYKES. It is coordinated with a number of other structures to the stream channel capacity. In other words, the draw-down tubes when all were discharging would not exceed the capacity of the stream channel below to carry off the overflow waters.

These structures, Mr. Jones, are designed for control of a 25-year flood. In other words, there would be no water, or little or no water that would go over the spillways of these structures up to the 25-year flood.[1] So that you would with your larger flood have some damages, of course. You would have some water going over the spillway. There would be probably some damage to the crops, but in reducing the total percent, the amount of water that you held back with your structure would still result in a larger decrease percentagewise up there with the smaller flood, because the total damages are larger.

Mr. JONES. How did you arrive at that conclusion?

Mr. DYKES. Your total damages are larger.

Mr. JONES. If you have a 25-year capacity flood retardation reservoir. If it goes to that 25 percent, then that is the maximum. Is that correct?

Mr. DYKES. That is right.

Mr. JONES. In other words, we will say that is 100 percent because that is the maximum capacity of all of the installation. Then over and above that is an excessive flow. Over and beyond your normal outlets. Is that right?

Mr. DYKES. That is right.

Mr. JONES. If you have that excess, you are going to decrease instead of increase percentagewise in the capacity.

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[1] Explanation: For a dam with an uncontrolled outlet a relatively small volume of water is detained for small floods as compared with large ones. The outflow rate is controlled by the head on the entrance to the draw-down tube. Hence the percent reduction in peak discharge is greater for the larger floods, at least up to the 50-year flood.

Mr. DYKES. No, sir.

Mr. JONES. We have different sets of figures somewhere.

Mr. DYKES. Yes, sir. I am afraid we do.

Let us put it this way: The damage from a 50-year flood, we will say, is $1,000,000 in this particular one watershed.

With the 50-year flood we reduce it by a total of $410,000 or 41 percent. You see, it all goes back to your total flood damage and the percentage you reduce the flood damage.

Mr. JONES. That would just be an inverse order for making estimates.

Mr. DYKES. Your total dollar damage might be higher, but the percent of your total damage would be less.

Mr. JONES. I see. You take the end results and make your estimates.

Mr. DYKES. Yes, sir. I think you must do that. In other words, your total dollar damage from your 50-year flood would doubtlessly be higher, but the total percentage in reduction would be also greater by installation of these measures.

Mr. JONES. I see.

Mr. DYKES (reading):

In other words, the combination of land-treatment measures and waterflow retarding dams gives a balanced program that will protect the South Cottonwood Creek bottom lands to such an extent that the flood-damage risk will be no larger than other risks such as drought, hail, and insect pests. The productivity of this valley can be kept to a maximum, equal to or exceeding that of the upland areas. Of course, some benefits from this program will also accrue down in the main Cottonwood Creek Valley. Similar program measures applied over all of the subwatersheds like Cottonwood Creek will effect some reductions in flood and sediment damages down on the main stem of the Grand (Neosho) River. However, in order to achieve assured protection for downstream urban areas and main river valley flood plains against superfloods such as that of last July, and to safeguard life there, other measures in addition to a watershed program may be needed.

I would like to add here just a word about our construction activities. The Soil Conservation Service, from the very beginning of our soil- and water-conservation program in 1933, has built substantial structures for water management. We have also provided extensive technical assistance to cooperators in earth-dam construction including, for example, dams of the water-flow-retarding type.

These small water-flow-retarding dams are constructed of earth by the most modern methods—methods that are commonly used by all Federal agencies. They are generally simple in design and easy to construct, the kind of construction that can be handled by scores of small contractors in every section of the country. Almost any contractor who does primary highway construction of earthfills and culverts can construct these small dams according to our specifications.

The Soil Conservation Service adapts its designs to meet the local conditions encountered. For example, where the objective is primarily to protect agricultural bottom lands, the Service provides a grassed spillway that is economical, efficient, and fully adequate for the purpose. These spillways come into use only as a result of flows exceeding 25-year frequency.

The Service has pioneered in research and investigations on this kind of construction. We have maintained at Stillwater, Okla., for the past 15 years, an outdoor hydraulics laboratory specializing in studies of the hydraulic efficiency of various kinds of grasses and vegetative channels in their resistance to and capacity to carry waterflow safely. The Service has also carried on a cooperative research project at St. Anthony Falls Hydraulic Laboratory, University of Minnesota, to study hydraulic characteristics and develop principles of designs of concrete spillways, small concrete structures required for stabilizing small watercourses, outlets of small dams, and related purposes. This project has been under way for more than 10 years. The Soil Conservation Service and the Forest Service have been carrying out hydrologic investigations on small

watersheds for more than 20 years. These studies have provided a basis for calculating rates of runoff from small agricultural and forested watersheds and for developing methods for determining flood-routing procedures in headwater tributary valleys.

We are convinced that the water-flow-retarding and other supplemental structures already completed under our watershed program in such areas as the Washita River Valley in Oklahoma will stand the searching examination of any impartial appraisal. We would like to point out that these works are constructed at costs per acre-foot of detention storage and at costs per cubic yard of fill that compare favorably with costs of most major dams which are being constructed in the country today, no matter how large.

In order to assure the technical adequacy of work done under the responsibility assigned to the Soil Conservation Service, we have over the years, assembled and trained what we consider to be a well-balanced technical staff. In addition to our technical specialists in soils, agronomy, biology, woodland management, geology, etc., we have some 1,100 professionally trained engineers who specialized in civil, irrigation drainage, and agricultural engineering. They have had a wide and varied experience in the conservation field. Some have been engaged primarily in the research aspects of hydrology, hydraulics, soil mechanics, structural design, irrigation, and drainage. A large number are especially well qualified in the planning, design, lay-out, and supervision of construction of the smaller type of earth dams resulting from the experience gained in building more than 10,000 water-flow-control structures, 215,000 farm and ranch ponds, and nearly 400 floodwater detention and sediment-control structures.

Our preliminary examinations and surveys follow a pattern quite similar to that used by the Corps of Engineers, with which you are familiar. These procedures, as well as those followed in installing authorized works of improvement, are described in a supplementary statement which we are submitting to you for the record.

We are giving careful consideration to the comments made by the staff of your commitee recently on the Green River, Ky. and Tenn., watershed survey report for which the Soil Conservation Service had been assigned responsibility. We feel that the presentation of program recommendations could be readily revised in conformity with your staff suggestions. Other suggestions can be adopted to improve future reports. We would like to point out, however, that due to the nature of our watershed reports, as contrasted with reports of the Corps of Engineers which deal with a relatively few specific large structures, it would be impractical, generally, to present our recommendations in the form of a specific plan of measures by specific locations. For example, maps in sufficient detail to show such measures (about 4 inches to the mile) are not prepared until operations are authorized. For an area such as the Green River watershed, planning maps laid end to end would more than cover this committee room. Experience to date indicates that the cost of work plans averages about 15 cents per acre or $100 per square mile. This would obviously represent an unjustified cost at the survey stage for areas of large size. We do, however, obtain such planning data on sample subwatersheds as a basis for program formulation.

Moreover, because our program involves the cooperation of thousands of individual landowners and operators, such work plans should not be prepared more than a year in advance of installation, and should be developed in cooperation with the local people concerned after funds are appropriated for installation. It is worth noting that approximately 5 percent of the farm land of the country changes ownership every year. As many of our programs are recommended to be carried out over a period of 20 years, it could be expected that much of the land would have passed into new ownership from the time of the preauthorization survey to the program's completion.

We realize, Mr. Chairman, that the time available has permitted only a sketchy presentation of the watershed programs, which we believe are a vital counterpart of the flood-control works on major streams. We have tried to cover those points which we have felt would be of particular interest to the committee. We shall, however, be pleased to try to clarify any points upon which you may desire further information.

That is the end of Dr. Salter's statement. He has prepared, Mr. Jones, a supplementary statement which is quite lengthy and covers the details of the formulation of watershed-improvement programs.

Also certain information concerning the economic evaluations that are used, and other material which I would like to submit for the record.

Mr. JONES. Without objection, let it become part of the record.

(The supplementary statement referred to is as follows:)

SUPPLEMENTARY STATEMENT BY ROBERT M. SALTER, CHIEF, SOIL CONSERVATION SERVICE, UNITED STATES DEPARTMENT OF AGRICULTURE

FORMULATION OF WATERSHED-IMPROVEMENT PROGRAMS (PROJECTS)

When a preliminary examination has indicated that a more intensive survey is warranted the departmental agency responsible for the survey, jointly with the cooperating agency, prepares a work outline containing information on the kinds and amounts of survey work needed and an estimate of the survey costs. A detailed survey is started after the work outline has been administratively approved and a survey party composed of appropriate technicians is set up for the job.

In formulating a watershed-improvement program two general types of interdependent measures are generally considered—land-treatment measures and supplemental structural measures—both of which are aimed at preventing or reducing soil erosion, floodwater, and sediment damages in the watershed.

The information obtained by means of the detailed survey falls into four broad classes:

1. Determination of erosion, floodwater, and sediment damages, and analyses of the relation of flood discharges and sediment production to watershed conditions. This involves a study of numerous floods over the recorded history of the watershed, with an appraisal of all the different kinds of damages which have been experienced. In this task the survey party works closely with other agencies which have collected similar data or are doing so, so as to avoid duplication and develop a coordinated picture.

2. Determination of the characteristics of the soils, land uses, and plant cover over the watershed, and an analysis of the present condition of each kind of land use and of its likely contribution to floods. This includes study of the amounts of runoff that are produced from different soils in different types of use and with different kinds of vegetative cover. Clean cultivated land, for example, will contribute much more to surface runoff than will the same land when covered with good forest vegetation or well-managed pasture.

3. Based on a study of the areas of land in each land-use class, cover condition, and soil type, detailed estimates are prepared of the measures needed to improve watershed conditions and decrease the volumes of runoff and eroded soil that cause floodwater and sediment damage. Along with this appraisal of needed changes, an analysis is made of the accomplishments which are likely to be gained by work now being done by landowners with such assistance as is now available from the various agencies of the Government. These accomplishments are subtracted from the total needs, in order to give data on how much more work must be done to achieve flood and sediment-damage prevention within a reasonable length of time.

4. After program estimates are available, detailed analyses are made of the effects which these changes will actually have in reducing floodwater, erosion and sediment damages.

In formulating the program of land-treatment measures for a watershed a sufficient number of appropriate samples are chosen which are representative of the various physiographic divisions of the watershed, and to provide a basis for determining erosion, floodwater, and sediment damages.

These samples are studied in detail to determine the present condition of the land and to form a basis for planning the units so that each acre will be used in accordance with its capabilities and treated in accordance with its needs. This study also provides a basis for determining the measures needed in stabilizing farm waterways.

The types and quantities of the practices and measures needed on the units planned in detail are then expanded to determine the needs of the various physiographic divisions and of the entire watershed.

We feel satisfied, based on experience since 1937 in the survey activities, that the sampling procedure scientifically determined provides an adequate basis for program development at reasonable costs.

These needed practices and measures make up the land-treatment portion of the program for the watershed which is aimed at increasing the capacity of the soil to absorb water and to retard the rates at which water moves off the land.

In formulating the structural portion of a watershed program, sample tributaries representing the various physiographic divisions of the watershed are selected. These selections are usually controlled by the presence of rainfall and stream-gaging stations within the tributary area which furnish basic data used in the hydrologic and hydraulic analysis required. From various preliminary studies the location and amount of erosion, flood-water and sediment damages are determined. More detailed studies are then made to determine the appropriate measures required to alleviate these damages. The types and amount of measures needed in the various physiographic areas are then expanded in order to determine the needs for the entire watershed.

The supplemental structures are designed to reduce erosion, floodwater, and sediment damages primarily along small watercourses. Various types of structures contribute to this end, the kinds recommended depending on the type, amount, and location of damage. Waterflow retarding structures, channel improvements, and dikes are used to reduce floodwater damage while bank stabilization, gully control, and grade stabilization structures, and sediment traps are used to reduce bank and gully erosion and sediment damages.

All of the measures recommended in the watershed-improvement program are designed to work in unison to prevent floodwater, erosion, and sediment damages on the upland and to reduce erosion, floodwater, and sediment damage along tributary streams. This work also produces very substantial benefits through increased production of crops and forest products; through the enhancement of the general welfare of the people in the watershed; through improvements in recreational facilities; through increased stability of the watershed economy; and in other ways. A thorough appraisal of all these benefits, both monetary and nonmonetary, gives a basis for judging whether the benefits are worth the investment.

STANDARDS FOR ECONOMIC JUSTIFICATION

The primary purpose of the Department's watershed programs is to bring about runoff and waterflow retardation, soil-erosion prevention and other benefits through the most effective utilization of land, water, and associated resources that are consistent with physical and economic feasibility. A careful weighing of program expectations and of alternative means for accomplishing desired results is helpful in selecting measures that will bring about desired social and economic benefits to local communities, regions, and the Nation through the timely and coordinated development, conservation, and utilization of agricultural resources.

The evaluation of effects is made and expressed in the manner considered most effective and appropriate for particular programs, including the use of monetary estimates, quantitative description of physical effects, explanatory statements of intangible values, or combinations of such terms and considerations. Evaluation of benefits and costs in monetary terms is required for the programs of watershed-improvement measures and practices designed for the primary purpose of reducing erosion, floodwater, and sediment damages that are proposed for authorization under flood-control legislation.

Every effort is being made to base such evaluations on sound economic and technological principles and standards. Although considerable progress has been made in establishing more systematic evaluation procedures over the past several years, the complexity of certain measurement problems is such as to require continued attention to improving evaluation methodology.

The Department has participated actively with other Federal agencies in the work of developing mutually acceptable principles, procedures, and standards for determining benefits and costs of proposed water-resources projects and programs. It feels strongly that the adoption of sound and uniform approaches will contribute materially toward improving the formulation and selection of justified projects and programs.

With certain exceptions the basic evaluation practices currently in effect are consistent with those proposed by the Subcommittee on Benefits and Costs of the Federal Inter-Agency River Basin Committee. Emphasis in the Department's approach is placed on comparable coverage of program benefits and costs, with primary attention to their measurement from a public viewpoint. At each stage of program development, suitable criteria, with respect to selections of measures,

are employed to insure that the benefits of all parts of the program to be recommended are greater than the costs. The basic approach used in evaluation is that of estimating differences between expectations with and without the proposed program in operation. The Department believes these basic principles and methods to be generally sound and to provide effective guides for the development and evaluation of programs.

REQUIREMENTS FROM OTHER THAN FEDERAL SOURCES

The watershed-survey reports recently referred to your committee recommend that the Department provide help to landowners and operators in the form of technical assistance and direct aids. The local contribution generally consists of sharing the initial installation cost. Direct aids from departmental appropriations provided through regular program channels, would constitute a Federal contribution in the public interest. In addition, individual farm operators assume the obligation for maintenance and other expenses including, in some cases, temporary loss of income from the land until new measures or systems of farming become effective. The contribution expected from local interests toward the installation cost of individual land-treatment measures varies from 100 to 20 percent. Those measures which provide immediate recognizable benefits to the individual farmers are usually installed and financed in large part by them. Other measures which are important to the over-all watershed-improvement program but which are too expensive in relation to the farmers' ability to pay or produce benefits which are too long deferred to be of material interest to an individual farmer, are financed in larger part and sometimes installed by the Federal Government. The Federal Government provides technical assistance for planning and applying the measures. It also shares the cost of educational assistance with State and local governments. For most programs, the local participation for installation of range and cropland measures amounts to from 40 to 60 percent of their total cost. Local interests also assume full responsibility for maintenance of the land-treatment measures.

The installation costs of structures are borne by the Federal Government and by local interests. State, county, other public and private interests, landowners, and operators participate in the installation, generally in the form of supplying equipment, material, sites, and services at their disposal, according to the benefits expected to accrue to their respective interests. For example, easements for the structure sites and the flowage areas above water flow retarding structures constructed to date have been furnished by the local people. In the Los Angeles River watershed flood-prevention program, the Los Angeles County flood-control district shares with the Federal Government in the cost of construction of minor channel improvements on a 50–50 basis in addition to obtaining easements for rights-of-way. In the Little Sioux River, Iowa, watershed program, the county highway departments furnish half of the cost of the earthfill construction of dams which serve the dual purposes of waterway stabilization and county highway crossings. The Federal share in each case is based on the amount of general public benefits. Maintenance costs of all structures installed on private lands are assumed by the local people.

PROCEDURES FOR INSTALLATION OF MEASURES MAKING UP AUTHORIZED WATERSHED-IMPROVEMENT PROGRAMS (CONSTRUCTION)

Measures installed on Federal lands are installed and maintained by the Federal Government.

In most of the 11 watersheds in which works of improvement programs are authorized, watershed associations have been formed, such as the Washita (Okla.) Valley Council of Soil Conservation Districts, for facilitating the cooperative aspects of planning, installation, operation, and maintenance of most of the measures to be installed on private lands. These associations are made up of representatives of each of the soil conservation districts lying wholly or partly within the watershed and of other concerned groups. Matters of watershed-wide concern such as determination of subwatershed boundaries and of priorities, by subwatersheds, in which work is to be undertaken are worked out with these associations. Each individual soil conservation district is responsible for arrangements with local soil-conservation district cooperators for installation, operation, and maintenance of the portion of the program located within that district. The district governing body enters into appropriate agreements with the assisting department agency and with the landowners and opera-

tors and others concerned covering working relations and the actual accomplishment of the work.

The subwatershed boundaries within an authorized watershed are determined on the basis of the drainage areas which will constitute the most effective planning and operations units. The requirements of design for retarding and routing waterflow generally determine such boundaries on the basis of hydrologic factors. Of considerable importance in some areas is the delineation of subwatershed boundaries so as to encompass a group of farms of such number as will facilitate the planning, installation and cost sharing of land treatment and structural measures—that is, a group having common soil and water problems.

Priorities for work, by subwatersheds, are determined in consultation with the watershed associations, mentioned above, or whatever body is representing the local people in the watershed. The factors governing determination of priority are:

(1) The relative importance of the several subwatersheds from the standpoint of critical sources of floodwater and sediment.

(2) The extent of understanding, acceptance, and application by the landowners and operators of soil and water conservation measures on their respective farms or ranches.

(3) The willingness and ability of the landowners and operators to cooperate in the installation, operation, and maintenance of the planned works of improvement.

(4) The location of the subwatershed within the watershed, particularly with reference to high-damage areas and improvements, such as major reservoirs.

When agreement has been reached as to the high priority subwatersheds in which works of improvement shoud be initiated, subwatershed work plans for those subwatersheds are prepared jointly by technicians of the Department and by the local people so that there will be a common understanding and acceptance of the specific measures required, where they are to be located, when they should be installed, and how the installation is to be accomplished, including how the costs are to be shared.

Each subwatershed work plan includes all of the land treatment measures and supplemental structures required and feasible for the prevention of erosion and the reduction of flood and sediment damages within the subwatershed, together with a schedule, by years, for accomplishing the total program in the subwatershed. Each subwatershed work plan is developed with the objective of achieving the maximum feasible reduction in erosion, floodwater and sediment damages on watershed and valley lands within the subwatershed substantially in accordance with the remedial program recommended for the watershed in the survey report upon which congressional authorization was based. As an administrative check on the soundness of such work plans, an analysis is usually made of the relation between the estimated average annual equivalent of the costs and the expected average annual benefits resulting from the work.

Local agreements are entered into between individual or groups of landowners and the soil-conservation district, covering the specific terms of cooperation for carrying out work. For example, a soil and water conservation plan for an individual farm will state the land use and treatment agreed upon, a schedule for accomplishment and what the farmer will do and what the soil-conservation district will do. Easements for structure sites are usually granted by the landowner to the soil-conservation district or other political subdivision of government. A memorandum of understanding between the soil-conservation district (or other acceptable local body) and the Department, sets forth the general terms of cooperation between the two parties. In it, the general basis is laid for making available the facilities provided under the flood-control appropriations, including technical services, equipment, materials, and supplies.

Installation of land treatment measures on privately owned land is primarily the responsibility of the landowners or operators on whose land the measures are installed. The greater portion of the actual installation work and cost is borne by the landowners or operators. They may receive direct aid in installing certain measures from the Agricultural Conservation Program of Production and Marketing Administration. Technical services needed in the planning, lay-out, and follow-up are provided by the Soil Conservation Service, Forest Service, and State agency technicians as may be assigned to the soil-conservation district or project area. Since all of the local participation is on a voluntary basis, it is essential that landowners take a major part in the planning, scheduling, and execution of land-treatment measures to be installed on their individual farms and of those measures which require joint action by a group of farmers.

The matter of timing of installation of measures is often of great importance. The effectiveness and sustained performance of certain related measures may depend upon the respective time of their installation. Specifically, for example, it is important that land treatment and watercourse stabilizing measures be installed and functioning where needed to control heavy sediment contributing areas in watersheds above waterflow retarding structures before the latter are constructed.

Contracts are let for those measures (principally structural in nature) providing primarily off-site benefits or which cannot be installed with equipment commonly found on the farm or ranch or requiring skills beyond the capacity of the local people to perform. Detailed designs, specifications and cost estimates, are prepared by Soil Conservation Service technicians. Invitations to bid are usually issued by the Federal Government to contractors who may be interested in bidding on the work. The customary requirements with respect to bond, methods of payment, acceptance of the work, and general regulations governing the issuance of contracts for Federal work are followed. Allotments of controlled materials are obtained for the small amount of strategic materials which may be in short supply. Contracts are let under competitive bidding to the lowest responsible bidder. Although the policy of the Department is to have the structures built by private contractors, the work may be done under force account if suitable bids are not obtained, or where it would otherwise be to the advantage of the Government to handle the work in that fashion.

Operation and maintenance of works of improvement installed on privately-owned land is the responsibility of the local people. The usual arrangement is for the maintenance responsibility to be assumed by the soil conservation district or other local unit of government under a memorandum of understanding. The Federal Government participates to the extent of furnishing technical assistance to aid in inspection and to advise with respect to maintenance needed. The soil conservation district, in turn, arranges for the specific terms of maintenance with the benefiting local interests. There are various forms in which this has been worked out. In the Buffalo Creek watershed, New York, State legislation has been enacted creating a joint board for the two soil conservation districts involved. The joint board may receive funds from the counties involved for the purpose of performing maintenance on the works installed under the watershed improvement program. The counties are authorized to allot county funds to the joint board. The State of New York may reimburse the counties for one-half the amount expended annually, upon certification by the joint board as to the funds actually expended for such maintenance. To date, $15,000 has been allotted and it is expected that $5,000 will be added annually until the maintenance fund reaches a total of $50,000. Iowa legislation permits counties to use the county general tax fund for maintenance of structures coming under county supervision and built in cooperation with the Federal Government in the watershed improvement program.

We need to give additional thought to the desirability of suggesting forms of legislation for consideration by the States, as may be appropriate, to facilitate the participation by local groups working with the Federal Government in the installation, operation, and maintenance of watershed works of improvement. In some cases, all that is needed, perhaps, is provision for applying funds from local or State sources to soil-conservation districts to enable them to assume maintenance responsibilities. In others, enabling legislation may be needed to provide for equitable assessment of benefiting interests to meet the local participation in construction costs and such associated items as easements for flowage areas, as well as maintenance.

COST EXPERIENCE

The 11 watershed-improvement programs authorized in the 1944 Flood Control Act were formulated prior to World War II. We have had accordingly a substantial increase, some 75 percent, in total estimated costs due to price changes alone. Since a large part of our work in these watersheds consists of technical assistance the total over-all cost has not risen as rapidly as straight construction costs due to a much less advance in cost of personal and related services.

We have found also in our operations work since the war, that substantial changes in program are required to meet present-day needs. The review reports now in progress on the Washita River watershed, Oklahoma and Texas, the Trinity and the middle Colorado River watersheds in Texas and others authorized by resolution of the public works committees will reflect these modifications

in program needs. We have operated under the principle, and expect so to do in the future, that substantial changes in program must be brought to the attention of and approved by Congress.

Our cost experience in actual application of the program is best considered, we believe, on a subwatershed basis—the nearest equivalent perhaps of a project in operations activities. Some examples illustrating this point on subwatershed structural work completed are in the Washita watershed:

Creek watershed	Estimated construction cost	Date of estimate	Actual construction cost	Average construction date
Sandstone Creek (24 structures)	$908,425	November 1949	$911,130	October 1950.
Mill Creek (6 structures)	102,276	January 1948	96,141	June 1949.
Owl Creek (4 structures)	38,557	do	27,146	October 1948.
Wildhorse Creek (4 structures)	85,234	October 1948	68,346	May 1949.
Total	1,134,492		1,102,763	

Mr. JONES. Do you have any further statement you would like to make in addition to the prepared statement of Dr. Salter, Mr. Dykes?

Mr. DYKES. I would like, if I would be permitted to at this time, Mr. Jones, to correct some of the misinformation that I gave the committee yesterday with regard to the Washita River.

As I stated, the Washita program is now in the review stage authorized by a resolution of this committee. The figures which I attempted to quote, and did so poorly, were from memory, and we have taken a look at this preliminary report.

At this time I believe I can get those figures before the committee that you asked for yesterday.

The total program cost as estimated—and this includes Federal, non-Federal, public, and private—is a little in excess of $74,000,000 on this 8,000-square-mile watershed.

Mr. MACK. 3,000?

Mr. DYKES. 8,000 square miles. The floodwater structures cost a total of $40,000,000, of which the Federal costs are $35,000,000, or nearly $36,000,000. The land-treatment measures cost a total of $23,500,000, of which $11¼ million would come in the form of direct aids through ACP assistance.[1]

Mr. JONES. That is the figure I was trying to get yesterday.

Mr. DYKES. That is correct, sir; and I was unable to supply it.

Mr. JONES. Mr. Magee is going to have to leave and he wanted to ask you a few questions before he does.

Mr. DYKES. Yes, sir.

Mr. MAGEE. Mr. Chairman, I am not a member of the subcommittee, but I appreciate the fact that you have asked the other members of the Public Works Committee to appear. I did not have the chance to bring this up before the Secretary of Agriculture yesterday, but in his statement which he read and filed here he stated that there were many forces working today which would eliminate the preferred position of nonprofit power distributors and which would have Federal power sold at the bus bar.

Mr. Chairman, I just wanted to get this in the record. In the past we have had very sad experience in that regard. I recall that previous to TVA the Government was selling power at Muscle Shoals at the

[1] This is correction of testimony of April 22, 1952, appearing on p. 215.

bus bar to private electric companies of this Nation. They sold that power at 2 mills per kilowatt and the private power companies were selling that power just across the river—and I have been there—at Florence, Ala., at 10 cents per kilowatt. If my mathematics is correct, that constitutes a profit to the private utility companies of 4,800 or 4,900 percent. Certainly we do not want to see that situation exist again in this country.

Now for my question to you, Mr. Dykes. I am not sure that I quite understood from your statement or from the statement of the Secretary yesterday just how the costs are apportioned on soil-conservation work as it ties in with flood control. Let us take the Washita project in Oklahoma.

The Secretary of Agriculture yesterday said something about 70 percent would have to be borne by the farmers. Could you go into that just a little more in detail?

Mr. DYKES. I do not recall that figure, Mr. Magee.

Mr. MAGEE. Are you acquainted with how the costs are apportioned in the Washita project?

Mr. DYKES. Yes, sir.

Mr. MAGEE. If you will, tell me that. I just did not seem to grasp it too well.

Mr. DYKES. Of course, the apportionment of the costs to the private individuals depends in a very large measure on the benefits that accrue to private individuals on site. In the case of the land treatment on farms and ranches, the farmers receive technical assistance—engineering and agronomy help, and soil-service help, at no cost to themselves, just as the rest of the farmers and ranches in the country do. In other words, that is a part of the Soil Conservation Service work in cooperating with the soil-conservation districts and sharing an appropriation made by this Congress for that purpose.

The only difference in the Washita from the rest of the country is that there is an accelerating program of technical assistance in order that the land treatment may keep pace with the upstream structural program.

As far as the cost of the work in that category, that is, the land treatment work itself, is concerned, about 50 percent of the out-of-pocket costs go back to the farmer through ACP assistance. That is the agricultural conservation program of the Production and Marketing Administration in the Department.

With respect to the retarding structural program, that is, retarding dams or detention structures, the largest share of the cost in that case is borne by the Federal Government, because the benefits accrue downstream and not on the farm of the individual on which they are constructed.

Mr. MAGEE. I think that is very clear.

Mr. DYKES. The cost to the Federal Government as I gave it here is approximately $36,000,000 out of the nearly $41,000,000 which I indicated would be our estimated cost of the structure in the Washita Basin. That is the entire Washita Basin of 8,000 square miles. In other words, something over 5,000,000 acres.

The private individuals' contribution amounts to only $5,000,000, and in that case consisted primarily of the land they gave in order that these structures may be put on downstream.

The benefits to the individual farmers on whose farms or ranches these structures may be built are often quite small and they are actually donating sites for these structures that benefit their neighbors downstream. It becomes substantial in the sense of what they are giving for what they receive as far as those individuals are concerned where the structures are located.

Mr. MAGEE. I had understood from the Secretary's statement—and maybe Mr. Jones, the Chairman, might set me right on it—but I had understood in this particular project about 70 percent of the cost was borne by the local landowner. Did you hear the Secretary's statement yesterday?

Mr. DYKES. Yes, sir, I did, and I do not recall the figure. He could have said it, but I do not recall it.

Mr. MAGEE. Do you recall about that, Mr. Jones?

Mr. CURRAN. I think the 70-percent figure, Mr. Magee, may be the one that the Secretary used when he said that before the Department of Agriculture would build any structures they required the farmer in the area to perform 70 percent of the land treatment they considered necessary as an adjunct of the structure.

Mr. DYKES. Yes, sir. That is correct.

Mr. JONES. In other words, that is 70 percent of the work that might be done.

Mr. MAGEE. That might be terracing, for example.

Mr. DYKES. Yes, sir. Terracing, contouring, cultivation, or putting former cultivated land down to grass.

Mr. MAGEE. Seeding with grasses, and so on.

Mr. DYKES. Yes, sir. In the land back of the structure.

Mr. MAGEE. Of course, that would be a benefit to the landowner himself.

Mr. DYKES. Yes. Certainly so.

Mr. MAGEE. Probably what you were talking about, though, is retardation dams and such as that where the Government spends the money.

Mr. DYKES. It occurs on this 70 percent of the work. The responsibility lies with the people who own and operate the land, of course. To encourage the people to do it in the period of time that is necessary to get the program installed, they get help in the form of ACP assistance and technical assistance from the Soil Conservation Service, and in some places from the Forest Service and from the extension services in some places, in order to get that work done back of the site of one of the structures. What the Secretary said is we are certainly not going in and installing a retarding structure whose usefulness is going to be destroyed in the first storm because it fills up with silt from the watershed back-up. His answer to the question yesterday, as I recall it, was that we had adequate control of that because we did not put the structure in until the farmers entered into an agreement to do 70 percent of the work.

Mr. MAGEE. Thank you, Mr. Dykes, and thank you, Mr. Chairman.

Mr. JONES. Do you want to proceed with any further statement?

Mr. DYKES. I have no further general statement, Mr. Jones, but I am available to answer such questions as the committee may desire.

Mr. JONES. Mr. Curran.

Mr. CURRAN. Mr. Dykes, I would like to develop a point in the paper you read. You state that 75 percent or more of the total flood damage is being caused by the smaller floods.

Mr. DYKES. Yes, sir.

Mr. CURRAN. The damage by large floods is generally reported by the Weather Bureau, the Red Cross, and the chambers of commerce, as well as the Army engineers. Is the 75-percent figure supported by other agencies than the Department of Agriculture or is that figure based entirely on Department estimates?

Mr. DYKES. I have observed probably our own studies, and I suspect, Mr. Curran, we have the major mass of information. We have had since 1929 these original experiment stations on which much of this information is based, plus these three hydrologic stations in which we have studied these small watersheds. The actual damage studies which are made at the time we make the surveys confirm our estimates in that respect.

Here is a chart on percent of damage by flood-frequency intervals for the Little Washita River, the Barnitz Creek, which is a tributary of the Washita and Owl Creek, which is a tributary of the Washita. You can see the line that shows these three studies we make. It almost touches each one of these. The round dots represent the Little Washita; the triangles represent Barnitz Creek and the crosses or X's represent Owl Creek. This is your percent of damage by flood-frequency intervals and this is the size of your storm or the magnitude of your storm.

At the 10-year interval you get about 90 percent of your annual flood damage taken care of if you control the floods up to a 10-year frequency.

Mr. CURRAN. The Corps of Engineers makes a study of flood damage. Are the two agencies in agreement on this portion of damage or do the Army studies differ from yours?

Mr. DYKES. I could not answer that, because I simply do not know.

Mr. CURRAN. Are you in agreement on the source of damage and the location of the damage on a given watershed?

Mr. DYKES. We could probably give you a better answer to that when we get through with the Salt-Wahoo in Nebraska because we are both working on that.

Mr. JONES. Did I understand you to say the 75-percent figure is only applicable to the watershed area that you mentioned here?

Mr. DYKES. That is generally pretty true in your small tributary watersheds, Mr. Jones.

Mr. JONES. But you do not mean this is a national figure?

Mr. DYKES. As far as small tributary watersheds are concerned, it is probably a good estimate. In other words, when you get up off the main stems of the main rivers, and we are talking about the tributary watersheds, it is the annual flood damage in the little bottom lands that flood once or twice or three times a year that really in total build up your flood damage to where that land is not useful.

Mr. Brown, who is Assistant Chief of Operations, says he can give an explanation for the record if you would like it.

Mr. JONES. Mr. Brown, state your full name for the reporter.

Mr. BROWN. Carl B. Brown.

Mr. JONES. And your title?

Mr. BROWN. Assistant Chief of Operations of the Soil Conservation Service.

Mr. Chairman, this figure has been used quite widely and has been quoted a good many times. For the record, it was derived on this basis: About 1944, I would say, an analysis was made of all of the watershed surveys that had been made up to that time by the Department of Agriculture, and the per-acre flood damages as determined in those surveys were expanded on an areal basis to the entire country. Our evaluations of flood damages, as has been explained, are for the tributary streams.

Mr. DYKES. That is correct.

Mr. JONES. I see.

Mr. BROWN. And do not to any substantial extent overlap the flood damage estimates made by other agencies.

Mr. JONES. On the main stems?

Mr. BROWN. On the main stems.

Mr. DYKES. That is right.

Mr. BROWN. At that time the official flood reporting agency was the Weather Bureau and they had published an estimate of the 20-year average flood damage on main stems, because their estimates do not go back into the tributaries. This figure of 75 percent is the comparison of our estimates on the tributaries with the Weather Bureau's estimates down on the main-stem streams.

Mr. CURRAN. When he said 75 percent or more of the total flood damage, did he mean that one-quarter is on the main stem and three-quarters is on upstream areas?

Mr. DYKES. No, Mr. Curran.

Mr. BROWN. Of the average annual damage reported by the Weather Bureau based on their studies from about 1924 to 1944, their estimate at that time was approximately $100,000,000 annually, as I recall it. Our studies of watershed areas, primarily the tributary areas, led to an estimate of approximately $300,000,000. That is where the 75–25 comes in.

Mr. JONES. How do you account for the other 25 percent then?

Mr. DYKES. That is the $100,000,000 on the main stems.

Mr. BROWN. That is the $100,000,000 primarily on the main stems.

Mr. CURRAN. That confirms my interpretation. Mr. Dykes, you read a statement that the area of land subject to recurring flood losses in small valleys is greater than the amount of additional land that can be brought under irrigation with the available water supply in the 17 Western States. Do you have figures on the sizes of those two areas that could be put in the record at this point?

Mr. DYKES. What we are saying is that there is more land in these small valleys subject to flood than all the remaining land that can be brought under irrigation with the available water supply in the 17 Western States.

Mr. CURRAN. Do you have the two figures?

Mr. DYKES. Five percent of our total agricultural land in this country on the basis of cultivated area—we have about 450,000,000 acres in cultivation, but that is by no means all that we consider to be a part of the American agricultural plan. In privately owned farms and ranches it exceeds 1,000,000,000 acres by not quite another 100,000,000. It is 1,081,000,000 acres, or not quite another 100,000,000 over the billion. The total is 1,081,000,000 acres. Our 5 percent is in

the neighborhood of 50,000,000 acres, if my mental arithmetic is right, Mr. Curran. We certainly do not believe that there is water for an additional 50,000,000 acres of irrigated land in the West, and that is the Bureau of Reclamation's estimate.

Mr. JONES. I understand you are pointing out in this statement that there is potentially in this country a greater amount of land that could be put in profitable production, that is, the land that has been misused and abused in the various parts of the country and which could be restored by proper land treatment, than we could ever expect to receive from putting new acreage into production.

Mr. DYKES. That is correct, Mr. Jones.

Mr. JONES. So the problem where you have excessive amounts of water is of greater moment than that of seeking new lands to put into production.

Mr. DYKES. That is correct, sir. I know of a little example down on the East Fork of the Trinity River.

Mr. JONES. We cannot get you out of Texas, can we?

Mr. DYKES. No, sir. It is hard to do. You see, I was a flood victim as a young boy, of the Trinity River. I was born and raised in the flood plain of the Trinity and in the 1908 flood I was a victim.

Of the 85,000 acres in the flood plain of the East Fork of the Trinity, only in about half of it or in about 50 percent at the present time do the farmers care to take the risk of cropping that land. Yet it is the best land they have. The uplands in that area are good soils, but are relatively thin and it is rocky, containing Austin chalk rock. In other words the program on the East Fork of the Trinity would reclaim about 42,000 acres of highly productive land which is subject to practically no erosion whatsoever, and where the main problem would be once we eliminated the danger of floods, that of a simple fertility maintenance problem.

I would like to direct the committee's attention to this map we have here on the East Fork.

Mr. JONES. We will come to that.

In the preceding paragraph to that just mentioned by Mr. Curran, are you pointing out here that even though there cannot be a complete flood-control program, works can be performed that would alleviate a large portion of the floods that occur on the small streams? Is that what you are trying to point out?

Mr. DYKES. Well, yes.

Mr. JONES. In other words, you can justify——

Mr. DYKES. Without reference to downstream flooding, Mr. Jones; yes.

Mr. JONES. I am not talking about that.

Mr. DYKES. Yes.

Mr. JONES. I am saying here is a project down here which you are going to approach and you say, "We cannot get a 100 percent flood-control project out of this stream but we can contribute 60 percent of flood control."

Mr. DYKES. That is correct.

Mr. JONES. "And therefore we can justify the investment from the amount saved by a 60 percent program in this area."

Mr. DYKES. That is correct, sir.

Mr. JONES. And that is in a field which has been totally neglected in flood-control programs in this country because of the philosophy

that since you do not give it 100-percent treatment therefore we will abandon it and not attack it at all.

Mr. DYKES. That is correct. At least it was not given any attention until the 11 watersheds were approved in the 1944 Flood Control Act on which we are now operating, because we are not claiming 100-percent protection.

Mr. JONES. Can it be justified economically?

Mr. DYKES. Yes, sir.

Mr. JONES. That is, justified for the Federal investment as well as those contributions that they contribute 100 percent to.

Mr. DYKES. Yes, indeed.

Mr. JONES. Are there any questions on that point?

Mr. MACK. Mr. Dykes, I gather from Secretary Brannan's statement of yesterday and Mr. Salter's statement of today that the main objective of your Department is to control the floods in the small tributaries of a river in order to prevent soil erosion and to retard the silting downstream and to prevent minor floods.

Mr. DYKES. That is correct.

Mr. MACK. The control of main floods is not the big objective of your program at all.

Mr. DYKES. That is correct, sir. We frankly admit we cannot, with the type of program we are talking about, control the kind of flood we are having out in the Missouri at the present time or in the upper Mississippi at the present time.

Mr. MACK. If your program for the Missouri River had been completely carried out, or if the program for the Columbia River had been completely carried out, that would not have had any appreciable effect on those gigantic floods on the Columbia of 1948 and on the Missouri last year and this year?

Mr. DYKES. I would say it would have had an appreciable effect, but it would not have prevented the flood from happening by any manner of means. Certainly any time you can hold back, as we expected to in this program, on the average of about 6 inches of rainfall for every acre of the watershed back of one of these structures, and we can hold it back for an indefinite period of time until it is safe to release it, you are going to take the crest off some of these floods. But it would have to be a complete treatment with that sort of program before we would materially affect such a flood as we are having on the Missouri at this time. It is out of our field.

Mr. MACK. Concerning these structures you are building in the Washita Valley and other regions, are there any flood gates in the structures for the release of water when you want it released?

Mr. DYKES. There is a tube through each one of these structures.

Mr. MACK. There is what?

Mr. DYKES. A draw-down tube—a release gate. A gate through the structures.

Mr. MACK. And you can release the water when you want it released?

Mr. DYKES. That is correct.

Mr. MACK. Who controls the release of that water? You or the Army engineers?

Mr. DYKES. No.

Mr. JONES. Mr. Dykes, you do not release that water when you want to. It is fixed so that it releases itself at a certain level.

Mr. DYKES. That is right. There is a stop or a wheel the farmer turns in a number of these tubes, Mr. Jones, where he can stop the water. We do not do it.

Mr. JONES. You have an overflow tube there.

Mr. DYKES. That is right.

Mr. JONES. So if the farmer did not do anything that water would run out.

Mr. DYKES. It goes out. That is correct, but we do not do it and the Army engineers do not do it either.

(The following information was supplied:)

To clarify the record, it should be pointed out here that the retarding structures in the Washita River watershed have a fixed outlet for release of flood-waters usually placed some 10 or 12 feet above the bottom of the retarding basin. A small pipe extending from the bottom of the draw-down tube into the basin provided with a valve permits the farmer to draw off the water below the ungated outlet of the flood detention pool. The amount of storage in the pool area below the ungated flood water outlet never exceeds 10 percent of the total flood-detention capacity. The flood-detention capacity, averaging 3 to 6 inches of runoff, lies between the ungated vertical outlet into the draw-down tube through the dam and the emergency spillway around the side of the dam. The small conservation pool below the level of the ungated outlet is provided to allow for silting over a 50-year period. During that period, however, the farmer can draw off this water for farm uses but the amount of additional storage that could be provided by drawing off the water would have no significant effect on increasing the water-flow-retarding effect of the dams.

Mr. MACK. Then, Mr. Dykes, is this not the effect of those dams. In the early stages of heavy rainfalls the dams become full. This retards the flood in these early stages of downpours, but does not retard it at the crest of the flood when the most damage is done.

Mr. DYKES. Let us put it this way: At Owl Creek, on this part of the Washita where we had a pretty severe storm—and, as I recall it, in the neighborhood of 12 inches of rainfall fell on that little watershed in a 48-hour period—the water flowed over that spillway to the dam. It was more than we were prepared to take care of. We were prepared to take care of about 6 inches of it. For 5 hours the water flowed over the spillway. The water went out through that trickle tube through the dam for 90 hours after the storm was over. The flush of it went out, you see, in those 5 hours. The water came up, and that part that was above spillway height went out in a period of 5 hours. The rest of it fed slowly into the stream for 90 hours.

The interesting thing about that was——

Mr. JONES. Let me ask you this question before you get into that: The total capacity of the flow from all the reservoirs will not exceed the capacity of the main-stream protection?

Mr. DYKES. That is correct.

Mr. JONES. So that is the premise under which these dams are constructed.

Mr. DYKES. That is correct. They are in series so that the total flow from them would not exceed channel capacity. As I recall the data that came to us, the three structures for a few miles—that is, for a few miles below the last structure on Owl Creek—Owl Creek did not get out of its banks. That was with a 12-inch rain on the watershed. A mile or so below enough side drainage came in from land that was not behind a detention structure that it did overflow when it got more than a mile below the last conservation structure. But those three were

coordinated to the channel capacity, and there was no overflow in Owl Creek for a mile below the last detention structure.

Mr. MACK. It seems to me that when the committee was out in Missouri and Kansas we were told they had a 30-inch rainfall. Then they had a 10-inch rainfall a few days later. It seems to me your small structures would have been filled up in the early days of that rainfall and at the time the crest of the flood your small structures would have had no effect at all in holding back the water.

Mr. DYKES. Yes, sir. I think it would have had some effect in holding back the water for the reason that these are not permanent storage structures. They are detention structures. There is a small permanent pool, so-called permanent pool, and we have explained to the farmers—and I think perfectly fairly so—that how good a job you do on the farm land and marshland that you have back of this structure will determine how long you will have to pay for the gift of this land to your neighbors generally for the use of this structure and the water supply. That water supply is a very small part of the total storage capacity, and based on our belief that in a period of 50 years it would disappear, because it would catch from the watershed back of it enough silt so that the farmer would no longer have any permanent pool back of that structure. In other words, as rapidly as the rains came they would be disposed of, except for that small permanent pool.

The difference between that pool height and the height of the spillway varies some, but it would hold 5 inches to 7 inches, or an average of about 6 inches of rainfall on every acre of land back of that spillway.[1] That makes a material difference in what could happen downstream.

Mr. MACK. Do you agree that the principal means of controlling these great disaster floods are dikes along the rivers and reservoirs and dams?

Mr. DYKES. I certainly do, sir.

Mr. MACK. In these projects that you undertake, are they authorized by a committee of Congress?

Mr. DYKES. Yes, sir. By this committee of Congress.

Mr. MACK. Such as the Washita?

Mr. DYKES. Yes, sir. That was authorized by the old Flood Control Committee.

Mr. MACK. On a cost-benefit ratio, the same as the projects of the Army engineers?

Mr. DYKES. Yes, sir.

Mr. MACK. That is all, Mr. Chairman.

Mr. JONES. Mr. Scudder.

Mr. SCUDDER. I would like to ask one question, Mr. Dykes.

Mr. DYKES. Yes, sir.

Mr. SCUDDER. In these small watersheds that are tributaries to the mainstem, is there a plan of control and releasing water that would minimize the flow in the mainstem? In a certain drainage basin there might be a heavy impact of rain that could cause a flood condition, whereas in another area of the mainstem there would be practically no rain. If the water could be released a little faster in one area it would save the impact of a heavy rain that might drift over to another watershed. I believe a coordinated plan could be devised to

[1] Correction: Volume retained is 3 to 6 inches of rainfall. Original figure used in letter, p. 355.

prevent floods rather than to fight them after they have become a reality.

For instance in California, there is a terriffic snow impact in the Sierras. Is anything being done to endeavor to regulate the flow from the large dams before the heavy snow melt takes place which is apt to cause a flood? It seems that some agency of Government should be in a position to make an estimate of the run-off in various watersheds and then release sufficient water to absorb a great part of the effect that is caused when the snow melt starts, or in case of a heavy rainfall.

Mr. DYKES. Are you familiar, sir, with the snow surveys which are made cooperatively by our agency and a large number of cooperating Federal and State agencies in the 11 Western States?

Mr. SCUDDER. I am not familiar with it, but I did ask the question of the Engineers when they were before us about 2 weeks ago, and my impression was that there was no coordinating agency set up that could counsel with the power company or the irrigation district, or the Federal Government, or any other Federal agency, and determine that a certain amount of stored water should be released in order to be able to absorb the expected shock.

I also was informed that there was no flood control in the Grand Coulee Dam and there was no flood control at Bonneville.

Mr. MACK. There is flood control in the Grand Coulee, but in the Bonneville there is none.

Mr. SCUDDER. I was under the impression they said there was no flood control in Grand Coulee; that it was strictly an irrigation and power project.

Mr. MACK. General Pick testified contrary to that.

Mr. DYKES. I would say there is certainly some flood control in the Grand Coulee.

Mr. SCUDDER. I was thinking there most certainly should have been some provision for flood control, the expenditure of such a large amount of money should protect the property in the lower reaches of the valley.

Mr. DYKES. Here is what we are doing. In the Division of Irrigation many years ago, while it was still a part of the old Bureau of Agricultural Engineering, before there was a Soil Conservation Service, the idea of determining the amount of stored moisture in the high watersheds through the making of snow surveys and measuring the depth of the snow and the amount of water that it contained—and that varies very considerably—was undertaken as primarily a service to irrigated agriculture in the Western States. That program was started many years ago.

When the Division of Irrigation was transferred to the Soil Conservation Service nearly 15 years ago—now we carried on that work with the funds appropriated by the Congress. We have spent about $70,000 a year. The Corps of Engineers, the Bureau of Reclamation, the Bonneville Power Administration, the States of Washington, Oregon, and Nevada, and so on, in the Washington area all contribute. Many of the irrigation companies contribute and the total program we have under way at the present time is something over $200,000. In other words, the Federal contribution was considerably less than half of the total cost of making these snow surveys.

By making snow surveys we are not, of course, determining how many inches of snowfalls. What we are doing is determining how much of a pack we have at certain periods and how much water is in that pack. Based on that information which we provide to irrigation companies, municipalities for municipal water supply, to the Corps of Engineers, the Bureau of Reclamation, the Bonneville Power Administration, and to all the people who operate these structures, they are enabled to determine how much draw-down they should make on their reservoirs in order to accommodate the new crest which is sure to come from that watershed back of the structure.

We do not have a perfect network, of course. That is, we are not covering every important mountain range in the western United States at the present time. That is only a matter of funds and facilities. It could be done. I do not think there is much question but what that information is valuable not only from the standpoint of irrigated agriculture in the West, but is also valuable from the standpoint of such flood-control preparations as can be made.

For example, at the present time there is a record pack of snow and a record amount of moisture in that snow pack in the headwaters of the Rio Grande. There is a need for all of that water, of course, in Elephant Butte Reservoir. The problem is going to be to get some of the headwaters of the Rio Grande through the Rio Grande Valley into the reservoir without such major floods to cities like Albuquerque and other small towns on the Rio Grande proper.

The very fact that that snowpack is there has warned the Corps of Engineers of the danger of the flood damages in the Rio Grande. It has warned the city of Albuquerque of the danger of a flood to Albuquerque, and all the other valley spots which could be flooded in case they had a rainy, warm spring and that snow came down with additional spring moisture. That is, if the moisture in the snowpack came down with the additional spring moisture with a sudden fall, for example, which means it all rushes down at the same time.

Something is being done about the problem, but I am not sure we have anything like a perfect answer to your question.

Mr. SCUDDER. In my opinion that is really a worth-while field to explore because I believe that a good part of the peak floods could be regulated; usually the precipitation is not as great in one area as it is in another and an intelligent regulation might avoid many floods that occur in a river basin. There would be no particular advantage in allowing a reservoir to fill and overflow. The water should be drawn down to a point to absorb the further runoffs of the watershed.

Mr. DYKES. Of course, in our small structures there we are not faced with that problem because the amount of permanent storage is so small anyway that there would be nearly no way without an expensive draw-down structure through those dams to permit the entire release of water in these small reservoir sites which the Department of Agriculture is concerned with.

I think your problem is not one we could help very much on because the total permanent storage is very small even in a series of these dams.

Mr. MACK. Will the gentleman yield?

Mr. SCUDDER. Yes.

Mr. MACK. Mr. Scudder has brought out a very important point to which serious consideration should be given when this committee

writes its recommendations. Taking the Columbia River as an example, the Army engineers have flood-control dams on the Columbia River. They have control over them if and when the water should be lowered in anticipation of a flood. The Reclamation Service has large dams, like Grand Coulee on the Columbia River, which they control. They have jurisdiction over them as to when and if the water in them should be lowered. Private corporations have many dams on the Columbia River for power purposes that also have flood control on them, and nobody has any control over whether these private dams should be lowered.

Mr. DYKES. That is right.

Mr. JONES. Mr. Mack, you recall that streams that require flood-control protection have licenses issued by the Federal Power Commission which carry that provision in them that they must be exercised at the request of the Corps of Engineers.

Mr. MACK. General Pick testified here the other day and said the Army engineers had no jurisdiction over the private dams.

Mr. JONES. He said that he did not have it on those dams where there was no flood-control activity, but the license that the Federal Power Commission issues requires that the private builder recognize the flood potential. You will recall further that General Pick said in no instance in all the experience of the Corps of Engineers had any private company failed to carry out flood-control protection measures.

Mr. MACK. My point, Mr. Chairman, is this: I think one agency of the Government, preferably the Army engineers, should have complete jurisdiction over the question if and when the level of water in impounding basins behind a dam should be lowered in order to give the downstream regions protection against a possible flood. If you do not have one agency then confusion and delay result and the agency which is guilty of neglect or which is guilty of poor judgment can never be held responsible for mistakes that are made.

Mr. DYKES. Mr. Mack, in the Columbia Basin there has been a voluntary council on this very subject created. I am not familiar with how well it is working, but the Corps of Engineers is represented, and Bonneville Power, and the Bureau of Reclamation, and our Service, and the Geological Survey, and the Weather Bureau. Everyone who has any piece of information or methods of control to use are now joined in a voluntary council which sits quite frequently at Portland, Oreg., with the very objective you have in mind. However, of course, their participation is voluntary and there is no mandatory control on the action of what they call the waterflow council, I believe. That is not quite the name of it, but it is very close to it.

Mr. MACK. My point is that the control ought to be in one agency and not in the hands of a debating society.

Mr. DYKES. Maybe you have something there.

Mr. JONES. Are there any further questions? Mr. George.

Mr. GEORGE. Suppose you represented a district that had an annual rainfall of between 30 and 40 inches. Do you think you could stop the recurring floods with soil conservation and without large dams? I have one river that has flooded 52 times in 25 years. It discharges the same amount of water going out of the State of Kansas going into Oklahoma that the Kansas River did last year going into Missouri. That is the Neosho in Kansas and the Grand River in Oklahoma.

Mr. DYKES. We have before this committee now, I believe, Mr.

George, a survey report on the Neosho-Grand River, in which our estimates are clearly set forth for the stream. Certainly we would not guarantee the elimination of 100 percent of the flood damage, but there will be, if the program is installed, a substantial reduction in flood damage and a very favorable cost-benefit ratio for the work which we see possible to do in the Neosho-Grand.

Mr. GEORGE. Will your program be much more expensive than the large dams that are now proposed?

Mr. BROWN. If I might answer that, our program is not aimed at the same objective as the large dams. The large dams proposed by the Corps of Engineers in the Grand-Neosho are aimed at nearly 100-percent control of all the floods down on the main stem. Our program is aimed primarily at the protection of agricultural lands in the tributary valleys, such as South Cottonwood Creek that Mr. Dykes referred to in his statement, to prevent the occurrence of damage from floods which are generally smaller than those which occur once in 10 years or more frequently.

Mr. GEORGE. Of course, the dams that are proposed on our rivers are such that there will be considerable rainfall that falls below them, enough to flood our rivers once in a while anyway. The total amount of rainfall is such that there is no place to impound water except farther north.

Mr. BROWN. Our program will have a very material effect on the tributaries that come into the main valley of the Grand-Neosho below the Army dams, and by holding back the additional water in those tributaries, that will reinforce the effects of the main dams on it.

Mr. DYKES. I think you can see that pretty well on this map, Mr. George, when you have a chance to look at it, because this is the East Fork of the Trinity.

Mr. GEORGE. We cannot hold our bank-stabilization program in that part of the country because of the excessive rainfall that comes down every year. Floods always breaks loose. They have just never been able to control it. All of the river valley through eastern Kansas is 6 or 7 miles wide and during flood stage the land that you claim you are going to reclaim in this 5,000,000 acres is first bottom land which is not farmed any more on most streams because it goes under water too often. They usually farm second bottom land which is on up a little further because it takes a very large flood to get over second bottom lands. But first bottom land is land which normally in a high rainfall area goes under water two or three times a year and it will wash the crop out or smother it. That actually is the land that you are going to try to reclaim with your program.

Mr. DYKES. With the treatment program and the small structures that are designed particularly to protect those first bottom lands in the tributaries.

Mr. GEORGE. The effect in our State is such that our folks in our State are so desperate for some kind of flood control and flood relief, because our damage has been recurring so often, that they feel they cannot stand it economically. We do not care whether it is your program or the Army engineers' program. All we want is whatever we can get the quickest and which would be the most effective. We would like to have both, but a lot of people, especially in the eastern part of the State, where we are in the high-rainfall area, think they

have to have these large reservoirs to start with. Then they want to implement those reservoirs with your program to keep them from silting, and otherwise protect our property. We want to do it the fastest way. I think we can get a program done faster with large reservoirs.

Have you any comment on that?

Mr. DYKES. Yes; I would have this comment only, Mr. George. You can get it done faster on the bottom lands on the main stem with the large reservoirs, without any question; but you do not do anything for the alluvial flood-plain lands along your small tributaries. I do not know, and I do not recall the figures on the Neosho-Grand, but on this map here we show about 85,000 acres of alluvial flood-plain land on the east fork of the Trinity. Lavon Dam, which the corps is constructing, and it is under construction at the present time, gives protection to 18,000 acres out of that 85,000 acres of alluvial flood-plain land. The other 67,000 acres of alluvial flood-plain land in the eastern fork of the Trinity is going to be protected. It will be protected through the program of the Department of Agriculture. In other words, it is those streams that are above the Lavon Reservoir. It is the flood plain along those streams above Lavon, and they are the ones that come into the main east fork of the Trinity below the dam itself. In other words, 67,000 out of the 85,000 are going to get protection from the Department of Agriculture's program; 18,000 get their protection from the Corps of Engineers' program.

Mr. GEORGE. Of course, our industrial damages are along the large rivers.

Mr. DYKES. That is correct.

Mr. GEORGE. Not along the creeks and the draws. We have just got to protect this property. In fact, the damage on the Neosho River last year was $42,000,000. The proposed four dams were estimated at $38,000,000 total cost. Well, we had the damage and if we do not have the dams we will have the damage again. Our folks just cannot take it year after year after year. In fact, it is going to affect the economy of the United States because we did get a provision in the income-tax law where they can extend their losses over a 6-year period and would not have to absorb them all in 1 year. So our State's contribution to the national revenue is going to go down in the next 4 or 5 years.

We have been very neglectful in this country in protecting our own people.

Mr. DYKES. That is correct.

Mr. GEORGE. What we want to do is get in the position where we can still protect and build up our own economy and our own industry and make ourselves strong at home. I am personally for both programs, but I want the quickest one we can get. I realize you folks do an important job, but when we go out to hold our hearings in Kansas we run into the folks who are going to be covered by the impounded water on our large reservoirs.

Mr. DYKES. That is always the problem.

Mr. GEORGE. And they say it is not necessary if you have the Agricultural Department program. These dams will not be needed then. I do not agree with them.

Mr. DYKES. I do not agree with them either, Mr. George.

Mr. GEORGE. Personally I wish you could sell the folks in our river valleys on our combined program.

Mr. JONES. Mr. George, will you yield for the purpose of letting him discuss the statement on page 4, in the second paragraph, beginning with the words:

> Watershed programs will have only relatively minor effects, however, on the disaster-type floods such as those experienced in the main Kansas and Missouri River Valleys last summer and this month.

Would you like to comment on that in connection with Mr. George's inquiries, and specifically about Tuttle Creek and that affected area?

Mr. DYKES. Well, Mr. Jones, I do not think that any additional comment is particularly needed. I thing the problem as far as Tuttle Creek is concerned is that you have one group feeling they will be materially damaged by the building of Tuttle Creek. They claimed—and I do not know whether the facts are true or not—that 55,000 acres of their best land on the Blue River are going to be permanently inundated. The people who own that 55,000 acres of bottom land are going to receive no benefits from the protection by the Tuttle Creek Dam. That we have to assess below, do we not, Mr. George? That is the protection to Manhattan and the places downstream.

Mr. JONES. Do you not know that is characteristic of the construction of any dam in the United States, Mr. Dykes?

Mr. DYKES. Surely. It is no different, Mr. Jones.

Mr. JONES. One dam required 56,000 acres in Jackson County, Ala. Yet it increased production and we are producing more than we ever produced before. So let us talk about flood control and look at the benefits which flood control inevitably is going to bring about.

Mr. DYKES. Yes; but my point is simply this: You have two groups of people with conflicting interests in the Blue River Valley.

Mr. JONES. Yes; but if we can dispel these conflicting interests out there we can go a long ways to get your project and the Corps of Engineers' project also in operation.

Mr. DYKES. Let us be frank about it, Mr. Jones.

Mr. JONES. That is what I want to be.

Mr. DYKES. Let us say this: We have not said Tuttle Creek should not be built. We have said that if you are going to protect the people below you are going to need a structure to catch these major floods.

Now, Mr. Jones, I do not know whether Tuttle Creek—in other words, I have not made any study of whether Tuttle Creek should be built or not. That has been done by the Corps of Engineers.

Mr. JONES. But, Mr. Dykes, you have a program in the same area and you have a responsibility there in the same area.

Mr. DYKES. That is correct, sir, and we can only say what we think our program in the Blue Valley will do.

Mr. JONES. And you say in this statement here, and the same statement was made by the Secretary yesterday——

Mr. DYKES. That is correct.

Mr. JONES. And it appears in Mr. Salter's statement today, and I hope you concur in it, that it is going to take a coordinated program.

Mr. DYKES. I certainly do agree with it, Mr. Jones.

Mr. JONES. Then why should you not know about the cooperative plans in a given area where you are permitted to work and the Corps of Engineers is permitted to work? How can you tell a committee

of Congress you do not know what the plan is going to do or not going to do in an area where you have as much rainfall since last July as normally falls in the Mississippi River down to Memphis, Tenn.

Mr. DYKES. I did not say I did not know what Tuttle Creek would do.

Mr. JONES. Then I am hard of hearing. I misjudged your statement somewhere.

Mr. DYKES. I think I said, Mr. Jones, and certainly I intended to say that we have not opposed the construction of Tuttle Creek.

Mr. JONES. Have you advocated it?

Mr. DYKES. I would not say we have advocated specifically the construction of Tuttle Creek Dam. No, sir; I would not, Mr. Jones. I do not know that that is our responsibility to advocate the specific construction——

Mr. JONES. Do you recognize the need of a reservoir to be constructed in a given area?

Mr. DYKES. Yes, sir.

Mr. JONES. Then why is it that you cannot advocate it?

Mr. DYKES. For the simple reason, Mr. Jones, that we have not made a study at Tuttle Creek as to whether the dam should be at that location. That is not our job. We have not made a study of the land that would be inundated by Tuttle Creek if it were built. We have not felt that was our responsibility to make a study. We have not been asked to make with the Corps of Engineers a joint report and program for the Blue River and the State of Kansas and the State of Nebraska. If so, we would be in a position to support Tuttle Creek if we had made such a joint study, but we have made none, and I do not know that the Corps of Engineers is in a position to support——

Mr. JONES. Mr. Dykes, I do not see how anybody can be associated with the purpose of flood control and fail to recognize that in that area, with the tremendous volume of water which they have there, that you cannot say unequivocally that a reservoir is needed in that area to take care of excessive floods.

Mr. DYKES. I said so, but if you are asking me whether Congress should appropriate money for the construction of a specific structure, then I say to you I do not know because I have not made a study of that specific structure.

Mr. JONES. That is going a long, long way around.

Mr. DYKES. No, sir. I do not think it is going a long way. It is simply attending to our business and letting the corps attend to theirs. If we are asked to make a joint study in the watershed and we made a joint study in the watershed, we would certainly support whatever that joint study shows.

Mr. JONES. Therefore you are contributing to the conflict raging in the entire area and we are not going to get a single thing done.

Mr. DYKES. Mr. Jones, I do not see it that way. The fact that we cannot come out and say—and certainly we have no specific knowledge of our own that Tuttle Creek Dam ought to be built—we recognize you have to have a downstream structure, but whether it ought to be at that location or at that site which the corps proposed, we do not know.

Mr. JONES. You are not answering the question on the general proposition. You are trying to be specific and say what kind of design it has.

Mr. DYKES. No.

Mr. JONES. You might as well go that far because you are avoiding making a general statement on the purpose of the dam, although you agree with it. Those things are the things that breed dissension and distrust for any Federal move that would be made to arrest flood control in that area. Maybe that is the cause of the whole thing, Mr. Dykes.

Mr. DYKES. I doubt that very much, Mr. Jones.

Mr. JONES. The people out there feel that way and they feel there is a conflict here in the Congress and in the Department of Agriculture and in the Corps of Engineers because certainly those people are really writing letters. We have had them up here saying that you do not need Tuttle Creek Dam. Here is one of your writers. The Bureau of Government Research of the University of Kansas put out a booklet entitled, "The Missouri River Basin, Proposals for Development." It reads as follows:

> The corps inferred that the Agriculture Department was infringing on its flood control functions. The effect of the squabble was to nullify statements made by both agencies during the last few months that their basin programs were not competitive but complementary.

It says further:

> A month later, a disagreement over big versus small dams occurred, with Governor Smith of Missouri leading the fight against large dams.

That is still going on now out there, Mr. Dykes.

The people who are going to work in the affected area ought to have some unity of purpose which would allay the fears out there, because you know as well as I do you cannot build a dam to take care of a large stream flow unless you have a reservoir that will hold the water.

Mr. DYKES. That is correct, Mr. Jones. I said that, but if you ask me do I favor and does the Soil Conservation Service favor an appropriation by Congress for the construction of the Tuttle Creek Dam I will have to say I do not know because we have not made a study of Tuttle Creek as a spot.

Mr. JONES. When you have a joint enterprise and a joint area affected in which you are going to carry on work, who determines where the Corps of Engineers places the dam?

Mr. DYKES. The Corps of Engineers determines it.

Mr. JONES. Do you accept it?

Mr. DYKES. Yes.

Mr. JONES. Why do you accept it on the one hand and fail to accept it on the other?

Mr. DYKES. We accept it. That is what I say. We accept there must be a reservoir there. We have passed Tuttle Creek through our review.

Mr. JONES. You passed it through? Are you in agreement then that Tuttle Creek should be constructed?

Mr. DYKES. Of course, that was in 1938, when it was authorized, Mr. Jones. That was 14 years ago. We are not going back on the passage of it.

Mr. JONES. I thought you said just now you did not agree Tuttle Creek should be built.

Mr. DYKES. No, sir. I did not say that.

Mr. JONES. What did you say then?

Mr. DYKES. Have the reporter read it back.

Mr. JONES. Your recollection is probably as good as the reporter's. Do you think Tuttle Creek should be constructed?

Mr. DYKES. I do not know. That was my answer before.

Mr. BROWN. May I say this, Mr. Jones: In connection with the formulation of our program on the Big Blue Watershed we took into account the fact that Tuttle Creek Dam was authorized.

Mr. DYKES. Certainly.

Mr. BROWN. No benefits were claimed within the 55,000-acre area of the Tuttle Creek Basin, or below that area. Our program is justified solely on the basis of protection of lands above the Tuttle Creek Dam, and it shows a benefit-cost ratio of approximately 3 to 1 for the total program on the watershed above Tuttle Creek.

Mr. JONES. What is your judgment about Tuttle Creek? Should it be built or should it not be built?

Mr. BROWN. We did not make any studies in connection with our program's impact on Tuttle Creek or Tuttle Creek's effect downstream. Our program simply stopped at the upper end of Tuttle Creek Reservoir, so we would have no basis for an opinion.

Mr. GEORGE. Do you contend none of the large dams and reservoirs should be built until you have put your program in first?

Mr. DYKES. No, sir. We certainly do not, and we would certainly agree, Mr. George, if you are going to protect the lower valley there are going to be needed reservoirs and levees for its protection, but when you ask me specifically do I approve a certain project on which we have made no study, I have to say I do not know, because I do not.

Mr. GEORGE. How many acres will be impounded under water on the small reservoirs on the Blue Valley in comparison with the acreage that will go out of production because of the large dams? Do you know that?

Mr. BROWN. Our program in the Big Blue watershed includes 912 upstream retarding structures. Those average approximately 733 acre-feet of detention storage per structure. As far as the total acreage involved is concerned I do not have the figure on what would be involved. You understand that our structures are built at the heads of flood-plain lands. They are built around the upper edges of the alluvial flood-plain areas.

For instance, the structures do not have control gates on them. That land is only flooded periodically—only once in 25 years would the maximum area up to the spillway be flooded.

Mr. GEORGE. I heard the statement made in a meeting that the smaller detention dams I think would cover as much acreage as the large dams, if not more. That is the reason why I was wondering whether you folks had the exact figures on that or not.

Mr. BROWN. That has not been true in the Washita where we have had experience. For instance, in this Sandstone Creek area——

Mr. GEORGE. You are talking about an area in the Washita that has at least a third less annual rainfall than they have in eastern Kansas area.

Mr. DYKES. That is correct.

Mr. GEORGE. I can take you out to the western third of Kansas, where they are crying for rain and need irrigation.

Mr. BROWN. That is true, sir, but the design of these small structures would be on a comparable basis. In other words, we would design for 4 inches, or 6 inches of runoff in the Washita just as we would in the Big Blue.

Mr. DYKES. You change the design enough to get your protection up to a 25-year flood.

Mr. GEORGE. The more rainfall you would have the more dams in the retarding area you have to have.

Mr. DYKES. That is correct.

Mr. GEORGE. And that would impound more acres even with your small structures. That is, if you are going to hold the floodwaters.

Mr. DYKES. It depends on the degree of protection you are endeavoring to afford.

Mr. GEORGE. We are asking for $700,000,000 worth of protection; that is the loss we suffered last year. I do not know how many more times we need to suffer losses in order to get the bureaus to give us a practical program we can unite on. I have attended numerous meetings in which this contention came up every time. I hope I never have to attend another one that we are not together on. It is very disheartening.

Mr. DYKES. Mr. George, I think we ought to make the record perfectly clear that we cannot and do not claim we can control major floods. If there is going to be flood control on the Blue and the Neosho-Grand and most of the other major streams in this country, probably all of them, it is going to take a coordinated program just as was outlined in Dr. Salter's statement. It will take land treatment plus detention structures and other works of improvement on the tributary watersheds, major dams and levees downstream, to protect the flood plains of our major river valleys.

Mr. GEORGE. I quit attending meetings in the Blue Valley. You understand, I do not represent that district. I am in the Arkansas drainage area, which goes south out of our State.

Mr. DYKES. I understand that.

Mr. GEORGE. I have no personal interest in it, but the reason I quit attending those meetings is that I heard such statements made time after time. I just do not want to have that happen too many times or over too many years.

Mr. DYKES. Our position has been the same for many years.

Mr. GEORGE. I think you folks could absolutely clear up the Blue Valley program if you would make a study and make a statement. I think you could clear it up in 30 days' time as far as an appropriation is concerned, and I have no personal interest in it at all.

Mr. DYKES. Mr. George, our former chief, Dr. Hugh Bennett, did make a statement—the words were somewhat different but the policy has not changed—at the meeting at Lincoln, Nebr., after the major floods last summer. That meeting was held in Lincoln on August 11, in which he enunciated almost exactly the same kind of philosophy with regard to flood control as was included in Dr. Salter's statement here today. He certainly made no claims that we could control major floods. He simply held out for a coordinated program of flood control.

Mr. GEORGE. The folks in that valley do not say that they can control them either. They say you have to put in this other program first before you can determine whether the need for the large dam is there.

Mr. DYKES. That is not and never has been our philosophy. I believe the Secretary said yesterday we were lagging far behind as far as authorizations are concerned, and that is certainly true.

Mr. JONES. In authorizations?

Mr. DYKES. Yes. Authorizations for expenditures, Mr. Jones. Not authorizations to make surveys. Our total authorizations for expenditures for flood-control purposes are, with present cost figures compared with the original authorization in 1944, in the neighborhood of $160,000,000 for flood control in eleven watersheds in this country. The total at the time it was authorized was about $90,000,000.

Mr. JONES. Do you have a survey resolution for the Blue?

Mr. DYKES. Yes, sir. We do have.

Mr. JONES. Does the Corps of Engineers have a survey for the Blue?

Mr. DYKES. As far as I know they do.

Mr. JONES. We have talked a great deal about coordination.

Mr. DYKES. Yes, sir.

Mr. JONES. Does coordination mean to you and the Corps of Engineers the exchange of talks about the programs that would be executed in a given area where both are to undertake work?

Mr. DYKES. That would be one means of coordinating, of course. The exchange of information which is voluntary.

Mr. JONES. Why has not that coordination gone ahead to the extent that you would know something about Tuttle Creek then? I cannot understand it. You say you do not know whether it should be built or whether it should not be built.

Mr. DYKES. That is right. I do not know personally whether it should be built, and I do not think the Soil Conservation Service is in a position to say that a particular structure should be built.

Mr. JONES. Then coordination is something like Damocles' sword. It is suspended in midair and does not come into operation. That is one of the troubles we are having to face. This coordination we are talking about is not actually carried into practice. Here is a group in an area that has had over a billion dollars' worth of flood damage with its loss of life and property, and the loss of fine agricultural lands, and we come up here and find we have discord and discontent, and we have this concept and that concept abroad throughout the country. There is not the objective of doing it, but who is going to do it.

Mr. DYKES. Mr. Jones, our program for the Blue River contemplates Tuttle Creek being built. We claim no benefits in the area.

Mr. JONES. Does the Soil Conservation Service advocate the construction of Tuttle Creek Dam?

Mr. DYKES. We have not advocated the construction of a single big dam that I know of. That is the program of the Corps of Engineers. We say it is a part of a coordinating job in a basin but it is not our responsibility.

Mr. JONES. Did you cooperate in the dams to be constructed on the Trinity River by the Corps of Engineers?

Mr. DYKES. Did we advocate them? No, sir.

Mr. JONES. Were you opposed to them?

Mr. DYKES. No, sir.

Mr. JONES. You were not for them, because it was not a coordinated plan?

Mr. DYKES. Sure, we are in favor of the corps building those structures. But when you say "Tuttle Creek," you name a specific dam with a specific authorization 14 years old; and, if you ask me does the Soil Conservation Service favor it, we have made no study of it and I have to say I do not know.

Mr. JONES. You are not coordinating then. You are failing to coordinate if you do not know about a reservoir dam which is going to complement the work of the Department of Agriculture in a given area which is going to be effective as far as your work is concerned. Is there not some relation between a reservoir on a main stream and the work you are doing in the upper reaches? How is the Corps of Engineers going to carry on its engineering studies if it does not know the capacity of your dams in relationship to the amount of water to be retained in the Tuttle Creek Dam?

Mr. DYKES. I think that is a very good question.

Mr. JONES. How are you going to determine how many detention dams should be built in a given area and determine reservoir capacity to the maximum stream flow at a point below? How are you going to carry out those things when you say you do not know whether a dam like that should be built? It is amazing to me.

Mr. DYKES. It is really quite simple for the very simple reason——

Mr. JONES. You are talking about coordination. What about the interagency committee hearings that are being held throughout the country? You participate in them; do you not?

Mr. DYKES. Yes, sir. We do.

Mr. JONES. Did you voice an objection to Tuttle Creek at the last meeting?

Mr. DYKES. So far as I know, no. I am not the representative on the committee. Mr. Young is here and you can ask him the question.

Mr. JONES. I hope somebody who can speak with authority for the Soil Conservation Service as a policy of the Federal Government that will be known to the Public Works Committee and to the House and to the Senate and to all the Congress will say what is to be expected of the program to be executed in that area.

Mr. DYKES. I have done so to the best of my ability, Mr. Jones.

Mr. JONES. No wonder this letter here came to the Congress. I do not see how he could have reached any other conclusion. I can well understand why there is discord out in that area, and I can well understand why we cannot get any money; because, with that kind of attitude if we cannot come up with an interagency type of work to be constructed in a given area and bring out this coordinated effort, then I do not see how we are going to get much of a program.

Mr. DYKES. Mr. Jones, I would like to ask you a question.

Mr. JONES. Yes, sir.

Mr. DYKES. I do not know the answer to this, frankly, and perhaps you do not either, but this is one for consideration.

The studies made by the Corps of Engineers, and they have probably been brought up to date for a considerable number of those, as I understand were authorized in 1938. At that time the Department

of Agriculture was just 2 years into the flood-control survey program. We had no information with regard to the Blue Basin at the time, and it is only within the last 2 months, I would say—is that not right, Carl?—that we have received a preliminary draft of our survey program on the Blue Basin as a supplemental resolution to the studies on the lower Missouri Basin.

If we talk about coordination I think it ought to work two ways. What consideration, if any, is given or is going to be given the proposed program of the Department of Agriculture in the Blue River Basin as to the design of the dam on Tuttle Creek? Is any consideration going to be given by the Corps of Engineers? That is a question they have to be asked.

I know you do not have any answer to it, but we are in a rather fortunate position in that respect. We can design a program on the Blue River because we are dealing with the tributaries to it, knowing that what we do is justified on the basis of the controls that we get on the tributaries.

Our program contemplates that Tuttle Creek will be constructed, or that a major dam would be constructed at approximately that site. We have taken that into account; and, therefore, we claim no benefits in the reservoir area. At present in Tuttle Creek there are no benefits to the alluvial flood plain lands below.

Mr. JONES. You are claiming what?

Mr. DYKES. We are claiming no benefits in the development of our program.

Mr. JONES. Do I understand you to say that the benefits will not accrue to the landowners below the dam?

Mr. DYKES. No, but we have claimed none in our presentation. That will be claimed by the Corps of Engineers, Mr. Jones.

Mr. JONES. My understanding is both of you will carry out flood-control structures up there.

Mr. DYKES. That is right, but we claim no benefits for the protection of the alluvial flood-plain lands below the dam itself. Is that correct?

Mr. BROWN. That is correct.

Mr. JONES. Why do you make that distinction?

Mr. BROWN. Because that is now an authorized project, Mr. Jones.

Mr. DYKES. That is right.

Mr. BROWN. Where the Corps of Engineers and the Soil Conservationn Service and the Department of Agriculture are carrying out joint studies as in the Washita, then those programs can be coordinated. But, if the Corps of Engineers already has an authorized project, then the only thing the Department of Agriculture can do is to take that authorization into account and build its program for the additional protection that can be afforded above that project.

Mr. DYKES. That is correct.

Mr. BROWN. So, the consequence is we have made no studies of what kinds of benefits might accrue, if any, in the Tuttle Creek Reservoir area or below Tuttle Creek. If Tuttle Creek were not authorized, we might have made studies of what our program would have done farther downstream, but in view of that authorization we have made no such studies and we find that our program is fully justified on the basis of the benefits above the reservoir in the tributary valleys.

Mr. JONES. Why do you not take into account the benefits that have been proved?

Mr. DYKES. They have already been claimed by the Corps of Engineers in securing their authorization. We cannot claim duplicating benefits with the corps.

Mr. JONES. You are not duplicating benefits for the simple reason, if you have a 10,000-acre-foot body of water that you are holding up in the upper regions, that is 10,000 feet less that will flow by a given point at Lawrence and Topeka; is it not?

Mr. DYKES. Yes, sir. We think so, but the point is, it would not flow by it anyway because Tuttle Creek would stop it, presumably.

Mr. GEORGE. The large dam would stop it.

Mr. DYKES. That is correct. Therefore, we would not claim the benefit for the 10,000 acre-feet that we are are stopping up there because it would be stopped anyway by Tuttle Creek.

Mr. JONES. If you build everything you are going to build you still will not have enough capacity to take care of that kind of water which we have there.

Mr. DYKES. I think you are correct. However, we have a situation we have to face. We have a situation where within a certain watershed there is an authorization by the Corps of Engineers and none by the Department of Agriculture. We have a situation where there is an authorization by the Department of Agriculture and none by the Corps of Engineers at the present time. We have a situation where there is no authorization to either of us. In that third situation in our opinion certainly the studies of the control program should be joint and we should come in and lay before the Congress a coordinated program.

Mr. JONES. The day will come, and it will not be too far away, when the resolutions will be considered as one resolution and work will be carried out under a general resolution reserving the integrity of functions to each agency.

This has been very interesting, but we are going to have to go over until tomorrow, Mr. Dykes. I wonder if we could not have you here again tomorrow.

Mr. DYKES. I would be happy to come, Mr. Jones.

Mr. JONES. Perhaps we will have to go over until Friday with this phase. I wonder if Mr. Watts can be with us Friday because I am sure we will consume tomorrow in going over the resolutions.

Mr. WATTS. I am Mr. Watts and I will be here Friday.

Mr. JONES. Would that be all right with you, Mr. Watts?

Mr. WATTS. If that is the pleasure of the committee.

Mr. JONES. We do not want to inconvenience you.

Mr. WATTS. I would say this: At this particular time we do have a great many hearings of a different nature in the Forest Service. Either I will be here personally or one of the assistant chiefs will be here at this hearing. We have several hearings that are going on at this time.

Mr. JONES. I know there are a considerable number of legislative committees.

Mr. WATTS. Either I will be here or a qualified assistant.

Mr. JONES. Thank you very much. Then we will get into the various watershed areas tomorrow. I would like to have on the watershed programs the designation of the land management ACP payments. That is, those participations that will qualify for payments.

Mr. DYKES. You understand on the 11 authorized watersheds, Mr. Jones, that are authorized in the Flood Control Act of 1944, no such distinction was made as to what was eligible for payment. The national program holds in that case.

Mr. JONES. The national program holds and there will be differences in certain areas.

Mr. DYKES. That is correct, because that is determined by the States and even by the counties in some cases. In the new programs we are presenting it is clearly set forth, I believe, in all cases.

Mr. JONES. Those, I believe, are 19. Do we have it in about 18 or 19?

Mr. DYKES. I cannot be sure of that.

Mr. JONES. That is, participations that are reimbursable to the landowners.

Mr. DYKES. It varies quite widely.

Mr. BROWN. It varies by programs. We can present that information.

Mr. JONES. We would like to have that too.

The committee will stand adjourned.

(Whereupon, at 12 noon, the subcommittee adjourned until 10 a. m. the following day, Thursday, April 24, 1952.)

STUDY OF CIVIL WORKS

THURSDAY, APRIL 24, 1952

COMMITTEE ON PUBLIC WORKS,
SPECIAL SUBCOMMITTEE TO STUDY CIVIL WORKS,
Washington, D. C.

The special subcommittee met, pursuant to adjournment, at 10:05 a. m., in room 1302, New House Office Building, Hon. Robert E. Jones, Jr., presiding.

Charles D. Curran, staff director.

Mr. JONES. The committee will come to order.

Mr. Dykes, how many resolutions are now pending that are in the survey stage?

STATEMENTS OF J. C. DYKES, DEPUTY CHIEF; CARL BROWN; LLOYD G. SIGNELL; AND H. O. OGROSKY, SOIL CONSERVATION SERVICE, DEPARTMENT OF AGRICULTURE

Mr. DYKES. Are you talking, Mr. Jones, about review resolutions, or total resolutions to include the survey of watersheds?

Mr. JONES. The survey of watersheds on resolutions passed by the Public Works Committee now pending in the Department for surveys.

Mr. DYKES. The ordinary procedure, as I understand it, for authorizing a survey, is for the name of the watershed to be included in the flood-control bill. Then in addition you have the resolutions passed by this committee and by the Senate committee. That is two different categories of work, actually. There are more than 600 watersheds that have been authorized for survey. Of course, a number of those have been combined in our survey procedure, so that that number would be something less.

On survey resolutions there is a survey resolution covering the Washita, the Coosa, and the Trinity. They are all pending, plus a number of resolutions, and I am unable to tell you at the moment exactly how many, covering parts of the Missouri Basin. I think we could give you a list of those, however.

Mr. JONES. I think you supplied us a list some time ago identifying the resolution by name and the subwatershed.

Mr. DYKES. The subwatershed in the Missouri. That is correct.

Mr. JONES. In all you have about 600, you say?

Mr. DYKES. 600 surveys have been authorized by the Congress.[1]

[1] The Department of Agriculture advised that 1,060 preliminary examinations and surveys have been authorized by law and 22 reviews by committee resolution.

Mr. JONES. And of those 600 surveys how many are actually in progress of being worked out.

Mr. DYKES. About 50. That includes the combination of a number of those in some cases which are included in the actual resolution. For example, we are working on a survey of the upper Mississippi Basin, which includes a considerable number of those that have been authorized by Congress. The same was true, of course, with the Missouri.[1]

Mr. JONES. When you say "authorized" do you mean a resolution passed for survey as distinguished from Congress having passed an authorization?

Mr. DYKES. That is a survey authorization included in a flood-control bill.

Mr. JONES. And you have at the present time 11 authorized projects?

Mr. DYKES. Yes, sir. Those are authorized for works of improvement as contrasted with authorized for survey.

Mr. JONES. Are works now being performed on every one of those authorized projects?

Mr. DYKES. On those 11?

Mr. JONES. On those 11.

Mr. DYKES. Yes, sir.

Mr. JONES. Those 11 have an estimate of cost of about $152,000,000.

Mr. DYKES. That is 1949 prices as compared with the original authorization of some $90,000,000, as I recall it.

Mr. JONES. So the estimate of costs now would be reflected in the general index of costs?

Mr. DYKES. That is correct, sir.

Mr. JONES. Now we have 11 authorized projects. We have some 50 projects that are now in the survey stage.

Mr. DYKES. That is correct.

Mr. JONES. Then we have pending approximately 550 that are still pending?

Mr. DYKES. How many there would be still pending, Mr. Jones, would be largely determined by how many are included in these overall surveys such as have been authorized on the Arkansas-Red-White. You see, they would cover quite a number of those that were authorized. The same is true of the Mississippi. The same is true of the New York-New England area. The same is true of the Columbia Basin area on which we are working on the basin program. The same is true in the Missouri.

I would not know how many would be left without going through and checking off those that have been authorized.

Mr. JONES. Of course, some resolutions are larger in scope to include——

Mr. DYKES. That is correct, and they include a number of smaller ones.

Mr. JONES. How much money was made available this year or was carried in the appropriation bill which has not been disposed of in the House? How much survey money will be available to you in the next fiscal period?

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[1] As of date of the hearings 11 projects had been adopted, 37 adverse reports had been submitted, 10 favorable reports were before the Public Works Committee, 1 favorable report was before the Agriculture Committee, and work was in progress on 67 reports.

Mr. DYKES. $1,000,000.

Mr. JONES. $1,000,000?

Mr. DYKES. Yes, sir.

Mr. JONES. How many surveys can you conclude with that $1,000,000?

Mr. DYKES. What are the plans on completion? Mr. Signell keeps the details of this record scheduled for completion in 1953. That would be the new fiscal year you are talking about.

Mr. SIGNELL. They are planning to work on 17 during the 1953 fiscal year.

Mr. DYKES. How many of them can be completed? Does that finish any of them during 1953?

Mr. SIGNELL. Yes. They would finish five of the surveys.

Mr. DYKES. Of the 17 we will be working on during the fiscal year, 5 of them will be finished, but the other 12 will have to go over into 1954.

Mr. JONES. So at the present rate of appropriations we will get approximately five projects completed per annum.

Mr. DYKES. That is surveys completed; because, of course, Mr. Jones, those are only those for which we have the responsibility. The Forest Service may also complete some surveys. I am not sure of what their plans are in the survey field.

As you know, the Secretary following the war divided up the territory of the country between the Soil Conservation Service and the Forest Service.

Mr. JONES. Yes, I know.

Mr. DYKES. The Forest Service has primarily those in wooded areas where the woodland was predominant.

Mr. JONES. Which put you in the pasture.

Mr. DYKES. And put us in the pasture and cultivated areas of the country.

On this map here we have shown as near as we can the progress of the surveys that are under way in the country. Of course, the big white area here is the Missouri and there is H. Doc. 373, Eighty-first Congress before the House Agricultural Committee on the Missouri which does include the work we did in the field of flood-control surveys. On the colors, Mr. Signell, would you explain what those are?

Mr. SIGNELL. The watersheds which are colored in green are——

Mr. JONES. The what?

Mr. SIGNELL. The areas that are colored in green.

Mr. JONES. What does that signify?

Mr. SIGNELL. That signifies the watersheds which are under survey in this fiscal year, that is, fiscal year 1952.

Mr. DYKES. We are already going in those.

Mr. SIGNELL. Those that are colored in brown are those which we expect to have under way in fiscal 1953 in addition to these that will not be completed in the 1952 fiscal year. The areas which are shown in blue indicate the survey reports which have been submitted to Congress. Those that are colored completely in blue are those that have been submitted, and the others indicate those that are on the way.

Mr. JONES. How many have been submitted in 1952?

Mr. DYKES. I believe 10 have come up, Mr. Jones. That may be subject to correction, but will you check it, Mr. Signell?

Mr. SIGNELL. A total of 10 have been transmitted to the Congress.

Mr. DYKES. Ten have been transmitted to the Congress. Would you like to have those listed?

Mr. JONES. No, sir. We have some, but some are in the hands of the people on the way up?

Mr. DYKES. Yes, sir. I just received one on the Grand (Neosho), a copy of the one that has just been printed. As far as I know, that was the second one. The Green has been printed and the Grand (Neosho) has been printed.

Mr. JONES. Let us take a project, one you would characterize as the most typical, and analyze it from start to finish and go through with it.

Mr. DYKES. I do not know that you can say, Mr. Jones, that there is any project in this field that is typical. Of the 11 that we are working on at the present time we have just about every kind of a flood-control problem that you can visualize in just about every section of the country. If we start up northeast and go around the country we get some idea of the range of problems that are involved.

Mr. JONES. We know you would have to be very versatile to take into account every kind of situation. I did not mean it was to be typical, but one for demonstration purposes that will give us a fine insight into the programing, the authorizing, and the works that are to be the result of your activities.

Before we get into that example, though, I want to clear up another point. As you know, at the present time we are having separate reports that have come up to the committee both from the Army engineers and from the Department of Agriculture.

Mr. DYKES. That is correct.

Mr. JONES. So in the presentation of individual projects we have two survey reports. They can be considered concurrently or they can be considered separately. What is your notion about combining those reports and making a single report out of them?

Mr. DYKES. I believe I said yesterday, Mr. Jones, that certainly there is no authorization by either the Army or Agriculture, that is, I thought we would get the best deal where we brought in a joint report and asked for joint authorization of the job. We have got a lot of other situations, however, that make that impossible, but where there is already an existing authorization and where work is under way in the watershed by one or the other——

Mr. JONES. I am speaking of new projects.

Mr. DYKES. On new projects I would certainly favor the idea.

Mr. JONES. Do you not think it would simplify the consideration of a project if we would have a combined report?

Mr. DYKES. I certainly do. Of course, I foresee some difficulties along the way. For example, in the matter of appropriation.

Mr. JONES. Of what?

Mr. DYKES. Of appropriation. I do not imagine with a $1,000,000 appropriation in fiscal year 1953, for example, that we would be in a position to stay by the side of the Army very effectively with the appropriation they may have for surveys.

Mr. JONES. You got $1,000,000 more than they got.

Mr. DYKES. Is that right?

Mr. JONES. Yes, sir.

Mr. DYKES. You mean they have no money for surveys of any sort?

Mr. JONES. Yes. That is right. No money at all for the current year.

Mr. DYKES. I was not aware of that fact. Then the situation would be reversed for a change. In other words, we have been given a very small amount of money for surveys in the past as compared with the Corps. If we have this sort of a situation, my proposition would still hold, that we would have difficulties unless each of us would have the appropriation that would permit us to pitch into the pot and get the job done. That would be the first difficulty that you would be up against appropriationwise.

Mr. JONES. That is one of the difficulties this committee is having and is going to try to overcome. That is the fact that we must insure coordination of appropriations because unless we do, projects will be presented that you are not going to know about or that the Army engineers are not going to know about, or the Department of the Interior will not know about.

So if we can combine those reports of all of the affected agencies, then I think maybe we can get some order out of the tremendous amount of backlog of authorized projects for survey. Are most of the surveys you are undertaking in areas where the Corps of Engineers or Interior have authorized projects?

Mr. DYKES. Yes, sir. I would say that there is authorized Corps of Engineers work either in the watershed in which we are making the survey or in a part of the major watershed of which that is a tributary. In other words, that goes along under the act almost to make that impossible to be otherwise. In other words, back in the original concept we would be working on the watershed and the Corps of Engineers on the downstream work, and any authorization held good for both of us. We have not all been able to make comparable progress in the making of surveys, to be sure.

Mr. JONES. Do you think it would be wise to carry out these surveys concurrently where more than one agency is involved?

Mr. DYKES. Yes, sir. Without question. Without question.

Mr. JONES. Do you think it would be wise to have the appropriation item handled by the Civil Functions Subcommittee of the Appropriations Committee rather than by the Agricultural Appropriations Subcommittee so that funds would be available in one place for all types of surveys where flood control is involved?

Mr. DYKES. I do not know what I would advise with regard to that, Mr. Jones, but certainly there should be some arrangement made, and that is probably as good a one as I could think of, so that you do not get one too far out ahead of the other in the survey process. Unless it is heard by the same subcommittee it is pretty difficult to be sure that you can keep your team in gear.

Mr. JONES. We have a certain amount of money which we say is for flood control. We have survey money amounting to $1,000,000 which goes to the Soil Conservation Service to carry out surveys for flood-control projects. We have the Interior Department, which carries out what they call administrative costs in going out and making these surveys. Therefore they have survey money. The Corps of Engineers has none, and yet they say, "We are carrying on the flood-control work."

Do you not think it would be best for all agencies to have an appropriation made for survey works concurrently, or jointly?

Mr. DYKES. Certainly there should be some arrangement whereby those agencies that participate in the survey could go ahead with their survey work concurrently in cooperation in order that the plans may be correlated. I do not know, frankly, how you could do it unless it was handled by one subcommittee, Mr. Jones.

Mr. JONES. Congressman Whitten, who is chairman of the Agricultural Appropriations Subcommittee, has indicated that he thought it might be a wiser approach to the problem to have the funds in the civil functions appropriation bill rather than in the agricultural appropriation bill. What is your comment?

Mr. DYKES. I know Mr. Whitten made that recommendation at the time that the Department was before his committee. As I recall it, I do not believe I saw the report. He asked the Secretary to comment on that and I do not believe I saw the final draft of the Secretary's reply. Therefore I could not comment specifically on what would be the Secretary's opinion about it, but I have already expressed my own.

Mr. JONES. You think it would contribute to the orderly consideration of projects if we knew how much work was to be done by the Department of Agriculture, the Corps of Engineers, and the Department of the Interior; if we knew what you are going to do in 1954, 1955, and 1956; if we had consideration given to one project in relation to the other as far as the Treasury of the United States is concerned?

Mr. DYKES. I certainly do. I certainly do.

Mr. JONES. Are there any questions on that point? Mr. Mack?

Mr. MACK. No questions.

Mr. DYKES. I would like to point out in that connection, Mr. Jones, that plans are already made in a number of watersheds by one or the other agency, and we still have the problem of catching up to a certain extent in that respect. However, if we are talking about new projects I would certainly favor a correlated approach to the problem, and I see no particular difficulty with that arrangement if it is understood that here is the agency that is out ahead and the other one needs to catch up. I think that can be made clear to the committee too.

Mr. JONES. The testimony before the committee when General Pick was here testifying for the Corps of Engineers was that he estimated the time elapsing between the date of a survey resolution and the actual construction of the project was some 10½ years. What is the average time that elapses between the date of the survey resolution and the time when the work is done?

Mr. BROWN. Eight years.

Mr. DYKES. Mr. Brown says 8 years, and that is probably correct. I have not thought about it except in this way: That many of the watersheds were authorized for survey in 1936 and 1937. The first authorization of projects was in 1944. Of course, work did not actually start on those projects that were authorized in 1944 until after the war was over and we had our first money for that in the 1946 fiscal year. So that would be almost the 10 years that the Corps talked about, although they were authorized in the 1944 act. Of course, there

simply was not any money appropriated by the Congress to start that work because of the war being on and a shortage of materials and personnel being present.

Mr. JONES. That contributes to some of the delay.

Mr. DYKES. Yes, indeed.

Mr. JONES. Taking the 600 resolutions now pending, at the present rate of appropriation do you feel you would be as old as Methuselah before you ever got them completed?

Mr. DYKES. It would be quite a problem before we ever get them, but you can see from the survey map that survey work is on in a good share of the country at the present time.

Mr. JONES. Will you explain that again? Mr. Davis did not get that.

Mr. SIGNELL. These areas colored in green on the map represent the watersheds in which surveys are in progress during the 1952 fiscal year by the Department of Agriculture. The areas which are colored in brown are the additional areas which we expect to have under way in the 1953 fiscal year. Of course, some of these which are colored in green will not be finished in 1952 so they will also be carried over into 1953.

Mr. DYKES. Mr. Davis, we have already testified we will be working on 17 watersheds in the next year, of which we will finish 5. The 17 include all of those in green and the new ones in brown on which we expect to start work.

Mr. DAVIS. That is a lot of work. It includes most of the basin.

Mr. DYKES. That is correct.

Mr. DAVIS. But you are doing some work in most of those areas as reflected by the green?

Mr. DYKES. That is correct.

Mr. JONES. They have $1,000,000 to do the 17 projects.

Mr. DAVIS. You cannot get very far on that.

Mr. DYKES. We will complete five of them and 12 of them will have to be carried over into the next fiscal year.

Mr. BROWN. I think it should be pointed out too that this map is based on the 1953 budget.

Mr. MACK. You show Oregon and Washington and Idaho in one piece on the map.

Mr. DYKES. That is the Columbia Basin area, Mr. Mack.

Mr. MACK. Puget Sound is not in the Columbia Basin and yet a section of the map relating to Puget Sound is on your map. Grays Harbor and Willapa Harbor are not in the Columbia River but are on your map as part of the Columbia Basin drainage area.

Mr. DYKES. It is included in the survey being made on the Columbia. There are a number of small coastal streams in both Oregon and Washington that are included in the Columbia survey report.

Mr. MACK. In other words, there are a number of projects outside the Columbia Valley in this Columbia Basin project, and not only the Columbia River.

Mr. DYKES. That is correct. They are small drainages, it is true, but they are included along with the Columbia and will be included in the report.

Mr. SIGNELL. To finish the explanation of the map, the areas that are colored in solid blue as indicated in here, are reports which have been transmitted through the Congress. The areas that are colored

in yellow are the 11 watersheds which have been authorized for works of improvement.

Mr. MACK. General Pick testified that the Army engineers have 947 projects which have been authorized by the Congress on which no work has been done. In the Agriculture Department are there a number of authorized projects on which no work has been done?

Mr. DYKES. Mr. Mack, there has been no authorized project for works of improvement on which no work has been done by the Department of Agriculture. We have only, on the other hand, 11 authorized projects for works of improvement, and we are under way in all 11 of those.

On the other hand, there is a very large number of authorized surveys on which we have done nothing up to the present time. In other words, we are not even to the point of beginning the surveys as you can see by the white areas on this map where we have not even started the survey.

Mr. JONES. How much money is included in the present reported bill for works on the 11 watersheds?

Mr. DYKES. $6,000,000 approximately, Mr. Jones.

Mr. BROWN. $6,750,000.

Mr. DYKES. Nearly $7,000,000.

Mr. JONES. $7,000,000 for all the flood-control work for the Department of Agriculture?

Mr. DYKES. That is correct, sir.

Mr. MACK. Those are just preliminary surveys.

Mr. DYKES. No. Those are for the 11 authorized projects—$6,750,000.

Mr. JONES. To carry out the works that should be done on those 11 projects, how much money should you have to carry out an orderly work program?

Mr. DYKES. You see, in each one those projects there was a time schedule set in the survey report. We are running behind that time schedule. According to the time we have been working we should be approximately 63 percent through and we are 20 percent through. That is one way to answer the question.

Mr. JONES. Will you repeat that?

Mr. DYKES. According to the schedule we should be 63 percent through and we are only 20 percent through.

Mr. JONES. In other words, you are falling behind your work schedule by 40 percent?

Mr. DYKES. We are going forward at about the rate of one-third as fast as we should be in order to complete the authorized projects on schedule. In other words, to get back on schedule we need about $25,000,000, Mr. Jones, to bring us back on schedule. Whether we could use that much of an increase in 1 year is subject to some question. It would probably have to be built up because with the appropriations we have had we have had to reduce the staff from where we started rather than increasing them as this work picked up. We could probably use at least twice what we have, but we probably could not use three time what we have, which would be the amount necessary to take us back on the schedule as set in the survey reports themselves.

Mr. MACK. How much money do you get for that work now?

Mr. DYKES. We have $6,750,000. We have $6,750,000 for the 11 approved projects. For works of improvement, that is. We have $1,000,000 for surveys. In other words, there is a total of $7,750,000 for the entire flood-control program of the Department of Agriculture. That includes the Soil Conservation Service and the Forest Service work, both.

Mr. DAVIS. Will you proceed, Mr. Curran?

Mr. CURRAN. Mr. Dykes, you have 11 projects that have been authorized. What is their present estimated cost as compared with that at the time of authorization?

Before you answer that, let me expand it. Are the projects being undertaken identical with those authorized, or are modifications being worked in?

Would you also mention approximately the percentage of present completion?

Mr. DYKES. The present completion figure is about 20 percent on the authorized projects, Mr. Curran. There is on a comparative cost basis between the 1940 budget as used in the authorization an increased cost of installation between approximately $90,000,000 and $152,000,000. In other words, the authorization in dollars at the time the 11 projects were approved was for $90,000,000 approximately, or 89 million and some-odd dollars. Bringing that up to 1949 prices, it is $152,000,000.

I do not believe we have made any further projection of that figure. That would show the increased cost of installation between the 1940 prices and the 1949 prices. In other words, you have an increase of $62,000,000 on a $90,000,000 project.

With regard to the other part of the question as to whether or not the exact program described in the survey report is being carried out, the answer is "No." We have pending survey resolutions, and it is certainly our intention to bring to this committee for reauthorization any changes in the program. That has already been done, for example, in Buffalo Creek, and it has been authorized in the stream bank erosion-control project which was dumping the Buffalo Creek contents into Buffalo Harbor in New York State. That one has already been materially revised to reflect the additional work that we found we had to do on it to control actually the amount of silt that was being deposited annually in Buffalo Harbor. That has come back to the committee and it has been approved by the Congress.

We have pending at the present time resolutions, and we have about completed the revised estimates on the Washita in Oklahoma, the Trinity in Texas, and the Coosa in Georgia in 1953; and I hope the Middle Colorado and the Potomac will run into 1954. We hope to have before your committee the necessary revised program to reflect the changes that we see in the program as originally contemplated in these new survey reports on these streams in 1953—the Trinity, Washita, and the Coosa in 1953, and the Middle Colorado and Potomac in 1954.

Mr. JONES. Do you still want to keep the Coosa all in Georgia?

Mr. DYKES. Keep it all in Georgia?

Mr. JONES. Yes.

Mr. DYKES. No, sir. We would like to do the whole Coosa and the survey report calls for that, as I understand it. I mean, the review resolution calls for the entire Coosa watershed. Is that correct?

Mr. SIGNELL. It is Georgia and Tennessee.

Mr. DYKES. You mean it is still Georgia and Tennessee?

Mr. JONES. That Coosa has been shifting around since I saw it last. It is quite a problem.

Mr. DYKES. The survey report covered the Coosa above Rome, Ga. The survey resolution says what now?

Mr. SIGNELL. The survey resolution states a review should be made of the Coosa in Georgia and Tennessee.

Mr. DYKES. But not in Alabama?

Mr. SIGNELL. Alabama was not mentioned.

Mr. BROWN. I think it should be pointed out we have a survey authorization, Mr. Chairman, for that river system.

Mr. JONES. Which would take in Alabama.

Mr. BROWN. Which would take in Alabama and the Coosa.

Mr. JONES. We have to get Alabama in some way.

Let us take a project and go through it and analyze it, Mr. Dykes.

Mr. DYKES. If it would suit the committee we would prefer to go to one of the newer projects. We have one, for example, which has just been printed, on the Grand (Neosho).

Mr. JONES. Do you have any charts on it?

Mr. DYKES. We have some charts and we can let you see them on that.

Mr. BROWN. I do not believe we do have any illustrations on that one.

Mr. JONES. I just saw one illustration on the Salt-Wahoo. I was wondering if we could see that.

Mr. DYKES. Do we have charts on the Salt-Wahoo?

Mr. BROWN. Yes; we have some of those. The Salt-Wahoo is included in the Missouri River Basin supplemental report which is now in the course of interagency review, which has not come up to the committee as yet. I believe you saw at one time, Mr. Chairman, an explanation of this Salt-Wahoo project. This map shows the entire watershed at Lincoln, Nebr., with Lincoln, Nebr., in it.

The particular coloration on the map here is to show the tributary stream systems all the way down to the junction with the Platte River, which is at this point. The colors on here are to show the mileages of streams in various size ranges. The red in here is the sizes of streams that range from 5 to 25 square miles of drainage area. The blue areas drain from 25 to 50. The green areas from 50 to 100. The yellow areas from 100 to 250. A stretch of orange in here from 250 to 500.

Coming on down to the purple, that is 500 to 1,000. The lowest region here is 1,000 to 1,655 square miles, which is the total area of that watershed.

A very careful analysis has been made of the kind of damage and kind of benefits that would result from the proposed program in there. I do not know whether the committee would want to go through that story now. Do you have particular questions that you would like for use to discuss on that?

Mr. JONES. I think if we could go through one, Mr. Brown, we would have a far better understanding of what we hope to accomplish.

Mr. BROWN. This is the chart which has been prepared to show the average annual damages in that entire watershed classified by types of damages. The scale over here ranging from $50,000, $100,000, $150,000 up to $350,000 in average annual damages. This shows the urban

damage, the railroad damage, roads and highways, bridges and culverts, crops and pasture damage, and other agricultural damage, and indirect damage, which is loss of business and that type of losses.

Mr. DYKES. I think it is significant to note that the agricultural damage in this watershed is quite a lot more than the urban damage, despite the fact that the city of Lincoln, one of the important cities in Nebraska, is directly affected by this watershed. It flows right through the edge of the city of Lincoln.

Mr. JONES. What is the character of the soil in that area?

Mr. BROWN. Those are mostly loessal soils in that area. Those are highly fertile soils such as characterize the upper Missouri Valley and eastern Nebraska and western Iowa. It is among the best corn land we have in this country. It is a wind-blown soil.

Mr. DYKES. A wind-laid soil.

Mr. BROWN. We have made an analysis there to determine how much of the damages in that watershed occur in stream reaches of various sizes. This chart shows the distribution of those damages by stream reaches. All of this is average annual damage. This shows the total for the streams of the 5 to 25 square mile category. We show with the same colors the crop and pasture damage; roads and highway damage; bridges and culvert damage. Then going on across, you see the urban damage to the city of Lincoln is the cause of this enlarged bar over here. That represents all of the urban damages in Lincoln, and this small amount here is the damage done at Ashland in the lower part of the watershed.

Mr. DYKES. At Lincoln you get nearly 500 square miles of drainage flowing through the city of Lincoln; 500 square miles back of the city alone.

Mr. BROWN. We have also made an analysis there to determine what proportion of that total damage is caused by storms of different magnitudes. We have found from that analysis that the 2-year storms, that is, the storms that would occur on an average once every other year, would cause this amount of the total average annual damage. The predominant type of damage caused by those small storms is the crop and pasture losses, that is, the agricultural damages.

As you come into the larger size storms, the kind that occur once every 10 years, the proportion of the total crop and pasture damage becomes smaller. One of the significant things that this study has shown is that the urban damage in the city of Lincoln is caused, that is, a very substantial part of that on an average annual basis, is caused by storms of the 10-year magnitude. The inclusion of the city of Lincoln damage in here is, of course, the thing that makes the total average annual damage from the storms in the 10-year category the largest in the size range.

On the basis of these analyses we have designed a program. Unfortunately, we do not have the map here that shows the lay-out of the program over that watershed. It does include the land-treatment measures, such as terracing and strip cropping and cover crops, and other measures that constitute a part of the soil and water conservation program on the farm land in that area, and includes in addition to that the small upstream floodwater retarding structures of the kind that were described here yesterday.

Mr. JONES. How many would it include, roughly?

Mr. BROWN. One hundred and sixty-five of those retarding structures are included in this program.

Mr. JONES. What is the approximate cost or average cost?

Mr. BROWN. Will you pick that out for me here?

Mr. JONES. About $18,000, is it not?

Mr. BROWN. That is approximately the average cost.

Mr. DYKES. I think that is right. My memory may be bad on it.

Mr. BROWN. We have shown on these charts then the effect of this program on different types of damage. We have shown by the effect first of the land-treatment measures alone, and secondly by the effect of the land-treatment measures plus the upstream retarding structures, the amount of damage reduction that would be obtained by this program. These are the same bars on the left which were on the chart I have just shown, showing the present average annual damages. The damages will be reduced by the land-treatment program alone in this amount, and with the addition of the retarding structures the damage would be reduced to this amount on an average annual basis. This is for the urban areas. This is for the railroads, roads and highways, bridges and culverts, crops and pasture, other agricultural and indirect damages.

In the floodwater-retarding structures 165 structures will have an estimated total cost of $2,456,800, of which the estimated Federal cost would be $2,211,200.

Mr. DYKES. It would run about $15,000, Mr. Jones, if my mental arithmetic is good.

Mr. JONES. That is $2,000,000. What is the estimated cost over the 10-year period for the entire project?

Mr. BROWN. For the entire project the estimated total cost is $33,949,400, of which the estimated total Federal cost will be $20,647,700.

Mr. JONES. Now the capital structures will cost $2,211,200 to construct?

Mr. BROWN. Those are the retarding structures. There will be additional stabilizing structures for control of major gullies and other types of stabilizing works in addition to the retarding structures.

Mr. JONES. How much will that cost?

Mr. BROWN. The stabilizing and sediment control structures will have a total cost of $3,765,100, and the Federal cost of those will be $3,012,100.

Mr. DYKES. Mr. Jones, I think I should point out at this point that the figures Mr. Brown is giving you are for the total program that is already going on in the Salt-Wahoo. A very considerable amount of this work on the basis of the accelerated program of what we need to do in addition to what all agencies of the Department of Agriculture are doing now we have a different set of figures on. That is on page 45.

Mr. JONES. That leaves approximately the Federal cost of $17,000,000. Where is that $17,000,000 to be spent?

Mr. BROWN. What Mr. Dykes referred to is the fact that a part of the costs I have just quoted would normally be paid from our going national program.

Mr. DYKES. Our national going program—SCS, ACP, and so on.

Mr. Jones asked where does the other $17,000,000 come in? Where does it go? What does it go for? You say $20,000,000 is the Federal total. What does the other $17,000,000 consist of?

Mr. BROWN. That would be local contributions to the project.

Mr. DYKES. No. The $17,000,000 of Federal cost. You say there is a $20,000,000 Federal cost in total. These structures cost only about $3,000,000. What does the other $17,000,000 of Federal cost go for? Give him a breakdown on that.

Mr. BROWN. Well, sir, it goes for a substantial number of items. The conservation and improvement measures in that area include seeding of grasses and legumes; crop residue management; contour farming practices; terraces; seeding of pasture; pasture management; pasture clearing; livestock watering facilities; contour furrowing and pitting; lime, fertilizer; outlets in waterways; erosion control structures; diversions and fencing.

Mr. JONES. What kind of fencing?

Mr. BROWN. That is fencing in land that is converted to——

Mr. JONES. Is that webbed fencing or barbed wire fences? What does it take to qualify for that?

Mr. DYKES. How about it, Paul? Do you know? It is barbed wire. It is a private cost, anyway.

Mr. BROWN. I am reading the measures that are included in the program, but not all of these measures have a Federal cost attached to them.

Mr. JONES. All we are interested in is the Federal cost.

Mr. BROWN. Those measures that have a Federal cost attached to them.

Mr. DYKES. And about the amounts.

Mr. JONES. In other words, there is a farmer out here in the Salt-Wahoo who is going to participate in this program. What is he going to get in the way of the ACP payments to carry out these activities?

Mr. BROWN. Mr. Chairman, I have that in two categories now and I can give it either way. The total cost which includes the cost with our going national programs, or the accelerated costs—the additional amount over and above.

Mr. JONES. We want the additional amount.

Mr. BROWN. Yes, sir. The additional amount.

Mr. JONES. You are talking about ACP payments?

Mr. BROWN. Yes.

Mr. JONES. Made under general legislation and appropriation that applies to every area of the United States.

Mr. DYKES. That is right. This is the accelerated cost which it would take to get that.

Mr. JONES. The whole program?

Mr. DYKES. That is right.

Mr. BROWN. I will read those measures again and give the estimated additional Federal cost for those measures that do have an additional Federal cost.

Mr. JONES. All right.

Mr. BROWN. Seeding grasses and legumes. If you do not mind, let me give it in round figures instead of dollars and cents.

Mr. JONES. All right, sir.

Mr. BROWN. $645,000.

Mr. DYKES. How is that broken down, Carl? Is that all direct financial aid to the farmer?

Mr. BROWN. Yes.

Mr. DYKES. Or does that include some technical assistance?

Mr. BROWN. No, sir. The technical assistance is broken down as a separate item.

Mr. JONES. It is over and above what is normally supplied in the area.

Mr. BROWN. That is right.

Mr. JONES. This $645,000 is for grasses, did you say?

Mr. BROWN. Seeding grasses and legumes. Permanent grasses and legumes.

Mr. JONES. That is for 10 years?

Mr. BROWN. For 10 years; yes, sir.

Mr. JONES. All right.

Mr. BROWN. The next item is "Terraces, $1,935,000."

Mr. JONES. That is for terraces?

Mr. BROWN. Yes, sir. "Seeding of pastures, $993,000."

Mr. JONES. Go ahead.

Mr. BROWN. "Livestock watering facilities, $252,000."

Mr. JONES. All right.

Mr. BROWN. "Contour furrowing and pitting, $127,000."

Mr. JONES. What was that again?

Mr. BROWN. "Contour furrowing and pitting." Those are practices used in grasslands to increase the infiltration. Contour furrowing of grass and pasture lands.

Mr. JONES. All right.

Mr. BROWN. "Lime, $313,000"; "Fertilizer, $815,000"; "Outlets in waterways, $616,000"; "Erosion control structures, $712,000"; "Diversions, $138,000"; "Drainage, $20,000"; "Farm wood lot and special farm planting, $151,000"; "Windbreaks and shelter belts, $178,000"; "Wildlife improvements, $10,000"; "Interplantings, $18,000"; "Timber stand improvement, $8,000."

Those are the conservation and improvement measures. In order to carry those out we have an item of "Technical assistance, $1,796,000."

Mr. JONES. What does that total, approximately? That is, the figures you have given us.

Mr. BROWN. I do not have those particular groups totaled up, Mr. Chairman. There is a total for the whole program but it is not subtotaled in here.

Mr. JONES. These are all going to be made in the form of individual payments to the farmers?

Mr. BROWN. That is right, sir.

Mr. JONES. Could this work be carried on by contribution of the farmers themselves without making these extra payments to them?

Mr. BROWN. There are, of course, the contributions shown over in this private column that the farmers themselves are making.

Mr. JONES. I understand that, but is this not a presumption that the Federal Government is going out into a new field? If the value of this program can be demonstrated to the farmers they would take care of the practices themselves without extra inducement such as is proposed here by building the structures and giving them the technical assistance to carry on the test demonstrations. Would it not be effective to have the farmers themselves carry it out?

Mr. DYKES. Mr. Jones, there is a national program that now covers the Salt-Wahoo area. We know about how much progress we are making with that national program. If we want to step up and complete this job in 10 years this is the estimated additional contribution over and above what we are now putting in there in the national program to encourage the farmers and give them an incentive to carry it out within this 10-year period, that is, the construction period.

Mr. JONES. But is that not rather offensive to the thought of good government? Should not the Government of the United States inspire the farmer to do the things for himself rather than making him the recipient of some grant or aid to carry out those programs? It seems to me the philosophy of government should be one of encouraging the farmer to use the tools at his own command to do it rather than come to his benefactors; and should it not be to wean him away from the Government rather than breaking him in?

Mr. DYKES. I certainly agree we ought to get the farmers to carry out their own everything that they would carry out. Of course, I did not make this survey, but that is the opinion of the people out there who did make this survey as to what it would take to get all the farmers throughout the Salt-Wahoo area in this program. This is the recommendation of our field survey party and is the recommendation of the Department, Mr. Jones, as to what it would take to do the job.

As to whether all of it would be used I could not say. I could not say it is absolutely mandatory that the funds be appropriated for that purpose, of course, and the farmers would not do it if they did not have these incentives to step up the carrying out of their conservation work. However, it is the opinion of the people out there who know them best that that is what it will take to do the job.

Mr. JONES. Mr. Dykes, the economic justification for these projects was based on increased production——

Mr. DYKES. That is correct.

Mr. JONES. In order to justify the Federal Government making an investment in it. Is it not generally true that increased production is being carried out in other areas of the country on the unit test demonstration groups? I recall I had a neighbor when I lived on the farm who was a unit test demonstration farmer. I found out he was able to produce a lot more than I could produce, so I started in to do the same things he did without being paid for it. It paid me to invest in better fertilizer and better seed and better farming practices.

I wonder if that could not be carried out in these areas without having the hand-outs to the individual farmers?

Mr. DYKES. Mr. Jones, without any question there is some spread of practice from farm to farm. There is no question about that.

Mr. JONES. What I am getting at, Mr. Dykes, is that we have a program here which every one of us wants to see accomplished.

Mr. DYKES. That is correct.

Mr. JONES. And we want to see it accomplished within the shortest period of time possible. But when you come back and examine the number of watersheds where work is now required and should be done, and when you think about spending $12,000,000,000 to $13,000,000,000 in one watershed area such as the Missouri, and then take that and multiply it by every watershed in the country, you realize

it is going to be such a frightful figure that we may lose the momentum of what we have already got.

It seems to me if we could approach it and demonstrate to the people through technical assistance and through demonstrations, that is, through the normal agricultural programs of ACP payments, that that is the thing to do, then we could accomplish a lot more.

I just wonder what you think about that.

Mr. DYKES. Well, of course, these farmers there are not eligible for ACP assistance, Mr. Jones. At the rate we are going now in the watershed with the amount of technical assistance that we have and the amount of ACP direct financial assistance that we have, the program can probably be completed, the program of land treatment, leaving out these additional measures for water flow retardation and channel improvement—the program can be completed in a period of between 40 to 50 years.

Mr. JONES. But we started in on a program and we said, "Here is a 10-year program." Every practice that you have suggested here is going to be a recurring practice. At the end of 10 years if the farmer fails to carry out the program that you have initiated in the 10-year period, then all your work is going to go for naught except your detention dams and your capital improvements.

Mr. DYKES. Of course, you could divide these practices up into what we would regard as the more permanent type of practices, such as terracing and that sort of thing. I believe that Mr. Gladwin Young is here and he can answer this better than I can, but I do not believe this contemplates the continuation of liming throughout the 10 years. This is the lime necessary to establish permanent vegetation on the land and is not a recurring practice that you have each year for 10 years.

How about it, Mr. Young?

Mr. JONES. Of course, it might not be required for 10 years, but then it might be required every 3 or 4 years, as soon as the land accumulates the acidity to the point where it needs reliming again. Then you are going to have to put it in.

Mr. DYKES. The farmer has to do it and it is paid at his own expense.

Mr. YOUNG. The figures Mr. Brown just read to you did not include recurring practices. They included the first installations. It includes the installations of the terraces that are needed and includes the estimates of cost of putting the terraces on regardless of the time period. At the present time the ACP payments in soil conservation work and extension work are getting those applied. As Mr. Dykes says, it will take a period of probably 40 to 50 years at the rate we are going under our national programs to complete that job in the Salt-Wahoo watershed. The figures that were given are not additional costs. They are the costs that would be required to complete the job. We have estimated it in a time period on those, but they are not additional costs.

As a matter of fact, if we went ahead with our regular programs, my judgment is that the cost of putting those measures on would be greater than the cost we have included here for a 10-year period, for this reason: Your conservation job runs ahead of you if you do not work at it fast. We think in 40 to 50 years, Mr. Jones, it would take more terraces than that. It would take more gully stoppers than that.

We think this is merely an economy measure to put it on at the more rapid rate. While the costs will be a cost in addition to the rate at which we are now expending them, the total cost of doing the job is actually less if we would do it this way in the Salt-Wahoo watershed and they do not include recurring practices.

For example, the amount of fertilizer and lime in there is for the purpose of converting cropland——

Mr. JONES. Then why do you not do it in 1 year if you say it is not a recurring practice? You can seed grass and build fences in 1 year.

Mr. YOUNG. Mr. Jones, you cannot put all your terraces in in 1 year because you are going to grow corn this year. You wait until your rotation before you can put terraces on.

Mr. JONES. What is the capital income of the farmers in that area?

Mr. YOUNG. I do not know, sir. It is a relatively high income area.

Mr. JONES. They are rather intelligent people out there and susceptible to learning new practices, are they not?

Mr. YOUNG. I am sure they are.

Mr. JONES. So do you not think that by eliminating some of this cost for these items you can get the same thing accomplished by way of technical assistance and demonstrations?

Mr. YOUNG. No, sir, Mr. Jones. I do not. I think it would take a long, long time for you ever to get it accomplished, if ever, unless the public invests in a responsibility which is the public responsibility. I would illustrate it in this way: That this generation of farmers has taken over that land and taken over the uses and abuses of those farms that they are now farming, simply because the techniques of water management and erosion control have not been a part of your farming pattern up until just very recently. In the period of history it is recently, because it is about 15 years.

Therefore we are asking this generation of farmers to catch up on many of the abuses that have been made on our land and at the same time make a living on it. We think the public has a stake in it sufficient to make that investment.

Mr. JONES. Is that not being accomplished generally throughout the country? In my area we haven't as much land in cotton as we had 15 years ago, and yet we are producing more cotton on half the amount of land. In the same area where technical assistance is being given we have increased fertilizer consumption over 1,200 percent in north Alabama. I think you are going a long way to accomplish just what you are talking about.

Mr. YOUNG. Certainly I think the technical assistance and educational work is a mighty important part of this job. But we considered that it would not be adequate in itself to accomplish this application in anywhere near the 10-year period.

Mr. JONES. Do you not think it is pretty hard to talk about fencing and other things as being a part of the charge for flood control?

Mr. YOUNG. A fencing item is not a public cost item.

Mr. JONES. It is not a public cost item but these windbreakers and shelter belts are public cost items.

Mr. YOUNG. Yes. That is a Federal item.

Mr. DAVIS. Who maintains such an item as that? When that deteriorates and goes bad who maintains it?

Mr. YOUNG. The individual farmer is made to do his own maintenance. There is no estimate in here that obligates the Federal Gov-

ernment to maintain the installations after they are installed. It will be the responsibility of the farmer.

Mr. JONES. But you have an agreement with the individual farmer that he will carry it out. In other words, you have to have 70 percent of the people in a given area before you are able actually to undertake that work and before you will go in and do this other work.

Mr. YOUNG. That is right.

Mr. SMITH. Concerning these items which the Federal Government contributes in regard to flood control, will they all contribute to the protection o fthe more specific flood-control project which is on that farmer's land in that vicinity?

Mr. DYKES. Yes, they do, Mr. Smith.

Mr. SMITH. And they make that a better long-term investment, you might say.

Mr. DYKES. That is right. That is part of getting 70 percent of the land treated back of the flood prevention structure. Surely.

Mr. YOUNG. Mr. Chairman, could I add one more point in explanation of the Salt-Wahoo program? That is that flood control is one of the benefits that comes from the program applied. We have said a good many times that you do not buy flood control in a package by itself. Certainly in this kind of a situation while the terraces contribute to the reduction and the retardation of water runoff, they are also a soil-conservation measure and therefore increase production. It is a multiple-purpose job which you do on the watershed, and one of the benefits is reduction in flood damage.

Mr. JONES. Could that not be charged to land management rather then to flood control?

Mr. YOUNG. As I say, you do not buy it in a single package. You have to put them all together and it is a matter of accounting to try to separate which of the benefits you make an accounting charge toward. Actually in the application of a program like Mr. Brown is explaining for the Salt-Wahoo you put the whole program on and you do not leave out terracing simply because it may not be a flood-control measure or solely a flood-control measure. It contributes to retardation of runoff, certainly.

Mr. DAVIS. May I ask a question?

Mr. JONES. Yes, Mr. Davis.

Mr. DAVIS. What do you mean, Mr. Dykes, by land management? I think I have an idea, but I would like to have a little clearer statement of what you imply when you say land management.

Mr. DYKES. We are really thinking in terms, Mr. Davis, of use of the land within its capabilities and the treatment of the land in accordance with its needs for maintenance and improvement. That constitutes good management of the land. We use the land only for the purposes for which it is suited, or for some less intensive purpose. In other words, if we have grassland that could be cultivated with intensive-cultivation practices, of course it could be used for pasture. A lot of it is being used for pasture. It could be used to grow trees, as far as that is concerned. So it is used in its capabilities, but we treat it in that particular use which the farmer determined he wanted to make of that particular tract of land. We use the combination of conservation practices and measures on it that would maintain the fertility and improve its productive capacity. That would constitute a sound program of land management.

Mr. DAVIS. That is a good statement. It is just about what I thought it implied.

Mr. SMITH. Mr. Chairman, perhaps this has been made clear in an earlier statement that I have missed, but if it has not been I would like to have it made now.

How are the payments to the farmers for these land-management practices in connection with watershed work made? Are they paid out of the appropriation for the watershed or are they paid out of the over-all ACP funds?

Mr. DYKES. There is no authorization at the present time, Mr. Smith, for that. I do not know whether you are familiar with the printed report on the Grand (Neosho) that has just been printed by the Public Works Committee.

Mr. JONES. While you are referring to that, will you discuss Mr. Staats' comment on page 3 of the report, House Document 388, Eighty-second Congress?

Mr. DYKES. That was what I was going to do, Mr. Jones, for Mr. Smith.

Mr. Staats' letter, the part that appears on page 3, covers the point of the manner of obtaining appropriations for carrying out this program, in which he essentially says:

> The Bureau also believes that the land-treatment measures set forth in the report, since they are largely an acceleration of existing programs of the Department of Agriculture, should be financed under appropriations other than that for the flood control act. This would avoid confusion in the presentation of the Department's budgetary program, since many of the current land-treatment programs of the Department have the objective of runoff and waterflow retardation and the prevention of soil erosion.

That is similar language to what appears in the Omnibus Flood Control Act of 1936.

> To the extent that the acceleration of land-treatment measures under existing authorities is not possible, we urge that adequate authorities for such acceleration be sought through amendment of those basic authorities.
>
> Your staff, on the other hand, believes that the Department cannot properly meet its responsibilities under the Flood Control Act unless the full program envisioned in the report is authorized under that act. Your representatives, however, agreed that appropriations for land-treatment phases implementing the program recommended in the report, upon approval by the Congress generally on the basis as submitted, would be sought as additions to going program appropriations of the agencies carrying on the work.

In other words, if I understand what Mr. Staats is saying, the Bureau of the Budget's policy would be that if the program on the Salt-Wahoo was authorized as included in the report then the work in land treatment, that is, the technical assistance of the Soil Conservation Service, and the financial assistance that comes through ACP—the appropriations to carry that part of the authorized program on the Salt-Wahoo would be added to the national going program and perhaps earmarked to go into the Salt-Wahoo program.

Under the Flood Control Act itself we would seek only those additional measures such as retarding structures and channel improvements, and that type of measure, which is not ordinarily included in the national program.

That is my understanding of this.

Mr. JONES. Then it would follow that at the present time you could seek additional funds under the general act without having a specific authorization for flood-control work in a given area.

Mr. DYKES. Yes; we could, Mr. Jones, but there would be, of course, no very reasonable way to earmark it for any particular section of the area unless it was tied in with the program of the additional flood-control measures.

Mr. JONES. It is specified in the flood-control bill itself that certain amounts of the total would be used in certain locations.

Mr. DYKES. That is correct.

Mr. SMITH. Last year, when the appropriation of the Department was being considered in the House, there was some exception taken to the size of the appropriation for watershed work, as I recall it, because of the confusion of administration. I do not know whether that occasioned anything or not, but it was something that occurred that ought to be cleared up in the interests of your work in the watershed field.

Mr. MACK. Mr. Chairman.

Mr. JONES. Yes, Mr. Mack.

Mr. MACK. Since I come from a forested area, Mr. Dykes, I was very much interested in the figures you have given as regards payments for the planting of wood-lot trees and timber-stand improvement. The figures for the Salt-Wahoo Basin that you cite for wood-lot planting are $151,000; and for timber-stand improvement, $8,000. Do I understand that money is paid to farmers for planting wood-lot trees for improving their timber stand?

Mr. DYKES. That is correct.

Mr. MACK. On what formula are these payments made?

Mr. DYKES. That is in accordance with the formula developed by the Agricultural Conservation Branch of the Production and Marketing Administration. Now, technical people in a county help the county Production and Marketing Administration Committee develop the formulas in these areas. You understand the Salt-Wahoo, Mr. Mack, is an area that is primarily prairie land and is not a forested area. Most of the forest areas are the wooded areas along the streams themselves rather than out on the highlands as you would have in your country.

Mr. MACK. Suppose you were applying this principle in the State of Washington where every farm has a wood lot on it. Would you pay that farmer for planting additional wood lot, and would you pay him for not cutting the trees he has on his acres?

Mr. DYKES. I could not tell you because I do not know what the policy of the Production and Marketing Administration in the State of Washington is or would be.

That is determined State by State, and even within the States, Mr. Mack, the counties have the privilege of selecting from a State-approved program.

Mr. MACK. Each State has a different policy, and each watershed basin has a different principle invoked for it?

Mr. DYKES. Their program is not on a watershed basis, Mr. Mack, but on a county and State and national basis. In the National Agricultural Conservation Program Handbook, all the practices that can be assisted—all those eligible for assistance throughout the United States—are included in the National Docket or National Handbook. The State Production and Marketing Administration Committee then is responsible for selecting those practices out of the National Handbook that apply to their State. The county selects from the one

selected by the State. The watersheds do not enter into it, so far as I know.

In this situation that we are talking about here of flood-control surveys, the situation would be somewhat different, as I understand it. In other words, there might be practices over and above—if it was needed for flood control and getting the program established on the land quickly—over and above what it would be in the county-approved docket if it was needed in that county for flood-control purposes. Is that right, Mr. Leaming?

Mr. Leaming of the Production and Marketing Administration is here.

Mr. LEAMING. Yes.

Mr. MACK. How much money are we spending nationally or paying in subsidies to farmers for planting trees?

Mr. LEAMING. I could not give you an answer to that, but I could furnish it.

Mr. MACK. I would like to know how much money is being spent by the Department of Agriculture in subsidies to farmers for planting trees.

Mr. LEAMING. We can get that for you.

Mr. DYKES. It is not a very substantial amount, Mr. Mack, but I could give you a figure.

Mr. MACK. It would strike me that whatever the amount was it was boondogling from my knowledge of timber in my particular area of the country.

Mr. DYKES. You mean it naturally reseeds in your area?

Mr. MACK. The farmer under ordinary practices is always clearing land and adding to his cleared acreage. If you are paying him to keep trees on the land, then you are paying him not to clear the land and not to increase his productive acreage.

Mr. DYKES. Of course, on the other hand we have in some parts of the country, Mr. Mack, perhaps 40 to 50 million acres of land that has been cultivated and is either too badly eroded so that it is inherently infertile in the first place, and our deep sandy soils which are primarily suitable for growing timber. I was on some of it in north Louisiana last time, a month ago, where people have starved out trying to grow cotton and corn and the normal crops, and where the land ought to go back into pine because that is the one thing for which it is best suited.

Mr. MACK. Of course, that is being done in our area of the country by the creation of these tree farms with the State and county organizations giving the raisers of tree farms some tax concession.

Mr. DYKES. All States do not have that tax concession, and the harvest is a long time off when you plan a 40-acre field down to trees. It is a long time that you wait for the harvest.

Mr. JONES. On this project, going back to the one we had under discussion, there will be approximately $17,000,000, and the whole thing will cost $33,000,000.

Mr. BROWN. The accelerated cost, Mr. Chairman, will be $27,545,000 total, of which the total Federal cost would be $17,522,000.

Mr. JONES. The total cost is $17,000,000?

Mr. BROWN. That is right.

Mr. DYKES. Of the accelerated part. In other words, we would normally expend $3,000,000 out of our going programs in there

whether this survey report is approved or not, during that 10-year period.

Mr. JONES. You would do what?

Mr. DYKES. We would normally expend $3,000,000 in there anyway. This accelerated part costs $17,000,000, which makes your total of $20,000,000, Mr. Jones.

Mr. JONES. What would be the total cost of this project when you take into account the cost of detention dams, laterals, drainages, and just the capital improvement?

Mr. BROWN. Well, the four measures that are included under the headings "Measures for Stabilizing Small Water Courses" are the measures which are not being installed under going national programs, and those would be capital improvements. The total Federal cost would be $6,206,000.

Mr. DYKES. That is on page 46 of the statement I gave you.

Mr. JONES. How long would it take you to complete that project if funds were made available for the $6,200,000?

Mr. BROWN. The estimated 10-year period.

Mr. JONES. I am talking about the 165 dams.

Mr. DYKES. It would still take the 10 years, Mr. Jones, for the simple reason we would not put in those structures until the land treatment back of those structures made it safe to install the structures. In other words, the program of land treatment has to come along to the extent that we will have it 70 percent controlled. The Secretary said here on Tuesday that we would have that 70 percent controlled before the structure was installed. For that reason we still think it would take 10 years to do it. There would be a number of small watersheds ready in the next year, without any question. That will build up as the program goes along, but we still believe it will take the 10 years to install these structures.

If it is just a question of going in and putting in the structures it will probably be done in a 3-year period, Mr. Jones.

Mr. JONES. All right. Do you think the people in that area or the farmers in that area where it is to be effective, if they were told that they must do certain things as a condition precedent, and that we will build the structure, do you think they would carry out their share without such payments and benefits from the Government?

Mr. DYKES. No, sir. I think on that point I will have to agree with Mr. Young, for this reason: That oftentimes there is a difference in ownership between the people who receive protection on the alluvial flood-plain lands, the bottom lands, and those who own the upland farms. What we are talking about is encouraging those people on the upland farms to install a program so that we can install a detention structure to protect the bottom lands. The ownership is different there. If each man who owned upland farms, Mr. Jones, also had a piece of that bottom land, I think maybe you would have a point there. However, we are dealing with two different groups of people. We are dealing with the people who have upland farms that have to be protected and the people down below who can really do nothing for themselves because they are the most helpless group of people in the world. A man who lives or has his farm land in the bottom is in that position because the action of so many other people determines how well he can protect himself. It is just practically impossible for the individual in that case to help himself in preventing floods.

There is your problem. You have your upland farmers who have to have the land-treatment program installed before we can really protect those people down below.

Mr. JONES. Now let me ask you this further question: In the consideration of this entire problem, is there any suggestion from the Soil Conservation Service as to how you can improve and get a better water policy on the part of the Federal Government?

Mr. DYKES. We have made certain suggestions which are incorporated in a report made by the Department. I believe it would be presumptuous on our part to make an additional report on that, Mr. Jones. The Department's representatives are here and can give the Department's feeling with regard to that. We participated in making certain suggestions which the Secretary has said are the suggestions of the Department.

Mr. JONES. You have testified earlier that you thought that these surveys on new projects, where other agencies were involved, could be made concurrent.

Mr. DYKES. Yes, sir. I certainly do believe that.

Mr. JONES. And the reports can be made jointly and not severally as they are being made at the present time.

Mr. DYKES. Yes, sir.

Mr. JONES. Do you think it would be proper and wise for every agency to have a 6-, or 7-, or 8-year program setting up and establishing the schedule to be pursued, which would give some standard for the annual amount of work to be done?

Mr. DYKES. I think it is the only reasonable way you can do it, Mr. Jones. Our own experience, I think, is a point in favor of such a procedure. Our people who are used on the survey programs in making these surveys in the past, or a number of them, are going to have to be shifted the 1st of July to other work. They are going to have to be in many cases moved to a different location from where they are now. If next year we have a survey program that involves a million and a half dollars in 1954 instead of the million-dollar program that is contemplated for 1953, it is going to be difficult to get back those same experienced people because they have had to move and have had to go to a new location.

Anything that would stabilize the survey procedures so that we could get experienced people and keep them on the job until we got through with this phase of the program, and then move them into the works of improvement phase of the program, would certainly be helpful.

Mr. JONES. You do not have a so-called planning period to a project? That is part of the administrative cost of the Department.

Mr. BROWN. We do work-plan development after we get our authorization.

Mr. DYKES. We make our plans for the small subwatersheds after authorization. You could say that is a planning period, although it goes through the life of the project. For example, if we had an authorization on the Salt-Wahoo for an installation period of 10 years, the first year we would probably get very little installation done. We would be planning those jobs that we do the second year. The second year we would be carrying out the ones planned in the first year, and we would also be planning for third-year operations. So,

the planning period, as far as we are concerned, goes concurrently with the period of installation.

Mr. JONES. Mr. George, have you any questions?

Mr. GEORGE. No; I have no questions.

Mr. JONES. Well, Mr. Dykes, we thank you again. You have been mighty kind and patient with us.

Mr. DYKES. You have been very patient with us, Mr. Chairman.

Mr. JONES. I wish I knew all the answers and did not have to ask you the questions.

Mr. DYKES. I wish we did too, Mr. Jones.

Mr. JONES. Tomorrow we will have the Forest Service. Will Mr. Watts be able to appear or is he going to send someone in his behalf?

Mr. HARPER. I think Mr. Watts will be able to be here, and if he is not here I will be here.

Mr. JONES. Fine. We will look forward to seeing you tomorrow. The committee will stand adjourned.

(Whereupon, at 11:45 a. m., the subcommittee adjourned until 10 a. m. the following day, Friday, April 25, 1952.)

STUDY OF CIVIL WORKS

FRIDAY, APRIL 25, 1952

COMMITTEE ON PUBLIC WORKS,
SPECIAL SUBCOMMITTEE TO STUDY CIVIL WORKS,
Washington, D. C.

The special subcommittee met, pursuant to adjournment, at 10 a. m., in room 1302, New House Office Building, Hon. Robert E. Jones, Jr., presiding.

Charles D. Curran, staff director.

Mr. JONES. This morning we will have a continuation of representatives of the Department of Agriculture. We have with us Mr. Lyle F. Watts, Chief of the Forest Service. We are delighted to have you, Mr. Watts. I am sorry that we have been rather slow and so have delayed you a day in appearing before the committee.

STATEMENT OF LYLE F. WATTS, CHIEF, FOREST SERVICE, DEPARTMENT OF AGRICULTURE

Mr. WATTS. That has been no inconvenience to me at all, sir. My name is Lyle F. Watts. I am Chief of the United States Forest Service.

Secretary Brannan has given you a general picture of the work programs of the Department of Agriculture for waterflow retardation and soil erosion prevention, as authorized by the flood-control acts.

This picture has been supplemented by Mr. Dykes, who has outlined the philosophy of his service on watershed improvement programs. In his supplementary statement he has presented the procedures that are followed by all agencies of the Department in formulating these programs. He has emphasized especially those features of our flood-control work which apply to Soil Conservation Service activities on crop and pasture lands. Accordingly, without duplicating information that has already been presented to you, I should like to tell you briefly about watershed improvement programs as they are applied especially on forest and range lands.

It is, I think, well recognized that forest and range lands play an important role in the control of water flow and erosion. When well managed and in good condition, forests and grasslands stabilize the soil and help reduce flood runoff. When in bad shape, they often contribute in large degree to the damages caused by floods. Because of their great extent throughout the United States, the condition of these lands from the watershed standpoint is fully as important as their capacity to produce wood and forage.

Most people understand these facts; but it is less well understood how forests and range vegetation function in controlling the move-

ment of water and in stabilizing soil. Before I get into details on the programs that are being set up for these lands, I should like to summarize some of the things we know about the influence of well-managed forest and range vegetation on water behavior.

I want to indicate how this knowledge is applied in working out an effective watershed improvement program.

The main object of land-treatment programs is to get more water into the soil, and to create more space where water can be stored in the soil. This object is attained by increasing plant cover or manipulating the cover so as to increase the rate at which water from rain or snow passes into the soil. A well-managed stand of vegetation on a watershed improves the structure of the soil and increases its ability to store water which would otherwise run off into streams and increase the size of floods.

A number of illustrations can be given to show how vegetation, especially forest and range vegetation, can be managed to reduce floods. Floods are aggravated when precipitation fails to enter the ground fast enough. This occurs when too much vegetation is removed and the soil is compacted by fire, overgrazing, or too heavy timber cutting. In the Northeast where much of the forest land has been poorly managed there is solid freezing of soil in the winter, so that water from melting snows cannot penetrate it. Where the forest is unburned, ungrazed, or lightly cut, on the other hand, the ground remains unfrozen or only partially so, and water readily moves through the soil for slow release to the streams. Similarly, on some western range lands it has been found that at least 70 percent of the land surface must be covered with vegetation or litter in order to prevent flash surface runoff and soil erosion.

In humid areas it is important to keep the soil mantle as dry as possible so that the recurring heavy precipitation can be stored in the soil. Thus it can be prevented from quickly flowing into the streams. This can be attained by growing or planting trees, brush, or other vegetation with deep roots. By their deep penetration of the soil these roots, as they grow and die, provide spongelike channels through which water can readily pass. The plants themselves draw water up from the underground storage in the period between storms and cause it to transpire into the atmosphere—thus making room for more water that falls during the storm periods.

In the arid sections of the West, particularly on the range lands, the problem is more complex. There we need vegetation that will promote infiltration of water into the soil, but not draw too much of it up again. This requires shallow-rooted plants, which normally draw moisture from the upper soil. Most of this moisture would be lost by evaporation, whether or not the soil were protected by vegetation. Range improvement can be expected to accomplish a great deal in soil stabilization and runoff retardation, at a relatively minor cost in added consumption of water.

Aside from its effects on the penetration and storage of water, well-managed vegetation stabilizes the soil and keeps it from moving into streams, ditches, and reservoirs. This means that the productivity of watershed land can be maintained. From the flood-control viewpoint, it means especially that stream channels are kept clearer so that they do not become clogged with deposits of sediment. In many places, this

means that the channels can carry larger discharges before they begin to overflow their banks and flood agricultural lands and communities.

As these effects of forest and range management are taken into consideration, the programs that we recommend for improvement of forest and range watersheds are varied considerably from one section of the country to another. In the South, for example, where fire is still a serious problem, the obvious first step is to bring fire protection up to standard. In a number of instances, the watershed values at stake justify a standard of fire protection considerably higher than would be necessary for timber production alone. There are about 66 million acres of forest land, principally in the South, that are still not under organized protection. A considerable part of the organized protection that is given is not adequate either from the watershed or the timber production standpoint.

The prevention of large burns is also of great importance in the mountainous regions of the West. Construction of expensive dams in the higher reaches of so many of the western rivers greatly increases the values at stake. Fire protection that formerly was reasonably adequate to safeguard the timber values is not adequate to protect the greater values that are involved in dams and water supplies. In some cases the dams themselves have blocked ready access to the watersheds above.

We believe that the dam-building program should be supported by definite plans and authorization for intensified protection of the watersheds. The sediment and debris that wash off severely burned forest and range lands can play havoc with reservoir storage space.

In other parts of the country, the Northeast in patricular, the present level of fire protection is generally adequate for watershed protection purposes. We do recommend intensified protection in certain critical areas.

The second most important watershed-treatment measure that we usually recommend is improvement of the forest floor and cover. This is accomplished by increasing the number and the size of trees in the forest stands. A well-stocked forest develops a floor of soil that is rich in humus, porous, and water absorbent. The way to increase stocking is through better cutting practices, and by planting trees.

Most of our programs recommend a considerable amount of planting on lands that will not regenerate naturally. Where the cost of this planting and the returns therefrom in timber products appear to be unattractive for private landowners, we recommend public financial assistance. For some areas that are of very low productivity, we recommend public acquisition either by the States or by the Federal Government.

Much of the forest land in farms throughout the East is now being grazed by cattle and other livestock. This grazing, if carried on too intensively, has an unfavorable effect upon the forest floor. The trampling done by the animals compacts the soil so that water permeates more slowly. The animals graze off the seedlings and sprouts and thereby prevent natural regeneration of young trees under the over-story of large trees. As a consequence, there are few young trees when the large trees are cut. Many of our programs recommend that the forest land be fenced in order to keep out the livestock, or that the livestock be confined to fenced pastures.

The cheapest and best way to maintain good stands of timber and a good forest floor is by good cutting practices and cultural work. This, of course, requires technical knowledge that most owners of small forest properties do not have. We recommend in almost every watershed program that the State and Federal Government, cooperatively, provide a limited amount of free technical service to the forest landowner. This service includes a preliminary examination of the forest property by a technically trained forester who then advises the owner as to the practicable ways by which the forest can be improved. The forester may then assist the owner by marking trees that should be taken out and by helping him to lay out skid trails and roads so that gullies will not develop therefrom.

Mr. DAVIS. This is a very interesting statement. All of these statements in the last few days have been of great interest to me. As time goes on I have become more and more interested in soil conservation and land management. I do hope that when the agricultural appropriation bill comes to the floor that we can save as much money for conservation as possible

I repeat, I am intensely interested in this statement, as I have been in many others. As a citizen of this country I just dream about the day when we will not have to spend so much money for war preparation and for the payment of the cost of past wars, so that we can do those things that I visualize as I listen to you read that statement.

In my own case, I go to and fro from Washington to my home State at least twice a year by automobile. At least I go up once and then back. I have noticed in Tennessee, for instance, an absolute change in farming practices. I see erosion control over a 12-year period, especially. I see improvements in farm property, in fencing and cultivation and in improved practices, and I just could not let this opportunity go by once, Mr. Chairman, without making that statement that it is just romantic.

You are getting right down to the meat of things. It just occurred to me when you say your Department could give technical advice here, there and yonder, that you have a different situation in the East and West, and a different situation in the Midwest, and it is different in my part of the country, in the South. It would be a great thing if your men, who are conscientious and painstaking, could pass the information down the line so that people know how to plan in order to have a proper growth of trees in a section of the country, and would know how to cultivate their land and do these things.

I am getting away from the flood control part of it now because I see it is a big picture, and if you have a whole team working together, some one of these days we are going to make this country even more prosperous and productive than it is today. We have 159 million people today, and they say in another 10 years we will have many, many more people than that.

I did not mean to take all that time, Mr. Chairman.

Mr. JONES. That is a very fine observation and it certainly comes at an appropriate moment, Mr. Davis.

Mr. WATTS. I would like to say, Mr. Davis, if I might, that in my own testimony on our appropriation this year, and without the slightest intent to criticize our military or foreign work at all, I expressed the view that our ability to carry that load in the future

would depend on how well we protect our water, our soil and our forests. Our natural resources will have to carry the burden.

Mr. DAVIS. One more point. In a great many places all over this country, Mr. Chairman, they are worried about domestic water supplies. They are disturbed about it. General Pick down in New Orleans made a statement which excited my very great interest. With proper management you can hold that rainfall that comes from heaven above and you can hold that water this way. The possibilities are just unlimited as to what we can do in the conservation of our natural resources.

People in some sections of the country are worried about a good supply of drinking water because we are taking so much out for industry now and more people are using water for domestic purposes. I am going to stop it. I feel good this morning.

Mr. WATTS. Growth in certain stands of young timber can be stimulated by thinning and other cultural measures. This is desirable not only to produce more and better timber, but also to develop the optimum soil and water-storage conditions of a well-managed high forest. Where direct financial assistance is required to get work of this kind done, conservation payments are recommended in conformity with the national agricultural conservation program.

Mr. JONES. Do you discuss that any further in your statement?

Mr. WATTS. Very little in the statement. I would be glad to answer any questions as I go along.

Mr. JONES. Would you explain to us the payments that are being made at the present time?

Mr. WATTS. As a matter of fact, sir, only a very, very small percentage of the total ACP payments are for forestry work. The bulk of it is for very simple things such as fencing wood-lots; building firebreaks around the wood-lots, or planting trees on farms. We do have a restriction that we will not make an ACP payment for such things as I mentioned here, like thinnings and timber stand improvement, unless the work is supervised by a technical forester. Because, without adequate forestry knowledge the farmer himself might do more harm than good. Therefore we have that restriction that we will not make payments for that sort of highly technical work unless it is supervised by a forester, State or otherwise.

Mr. JONES. Who will furnish the seedlings?

Mr. WATTS. ACP generally through the State forester for planting.

Mr. JONES. What do they pay in ACP payments for planting?

Mr. WATTS. It is covered in two ways. I may not be able to answer this fully, but it is covered in two ways. First, for many years, as you gentlemen know, the Forest Service cooperates with the State forestry departments in furnishing small trees for planting by farmers, at low cost.

The Federal Government through the Clark-McNary law is paying a part of the cost of growing those trees. Then under the ACP to a very limited extend so far, in some counties and in some States, they do allow payments to the farmer for the time he spends in planting the trees. I think less than 2 percent of the total ACP cost was for forestry.

Mr. JONES. Is it not something like $4 an acre for planting? $4 to $6 an acre?

STATEMENT OF PAUL LEAMING, PRODUCTION AND MARKETING ADMINISTRATION, DEPARTMENT OF AGRICULTURE

Mr. LEAMING. It would run about $6 in 1950.

STATEMENT OF DR. VERNE L. HARPER, ASSISTANT CHIEF OF FOREST SERVICE, DEPARTMENT OF AGRICULTURE

Dr. HARPER. Mr. Chairman, I might tell you what we are doing in the Little Tallahatchie where we have works of improvement programs under way. In that watershed planting costs about $20 an acre. That includes——

Mr. JONES. That includes cutting and renovation, does it not?

Dr. HARPER. That includes gully plugs and brush dams to stop erosion, as well as planting. It also includes the cost of the planting stock.

Mr. JONES. Does that include elimination of deteriorated and undesirable trees that are in the area?

Dr. HARPER. It does not include such work, no. Most of these areas, incidentally, are pretty badly denuded. There isn't much tree growth on them.

Mr. JONES. You are talking about where you have a project. I am talking about the general ACP payments over the country as a whole.

Dr. HARPER. May I finish the statement here? Out of that $20 the seedlings are paid for out of flood-control funds and given to the farmers, and then the farmer recovers part of his planting cost by ACP payment of——

Mr. JONES. Let us go back now to what I am trying to get at. That is, what payments are made under ACP payments on the general program? Then we will go back to the watershed.

Mr. MACK. I received a statement from the Department this morning that might be enlightening. The Department said the total amount of money which was spent for tree planting totals only $750,000 for all of the United States.

Dr. HARPER. I think Mr. Leaming has a statement in answer to the question.

Mr. WATTS. May I read this statement now?

Mr. JONES. Yes.

Mr. WATTS. Yesterday the question was raised in the hearing on the extent of the tree-planting practices which had been carried out under the agricultural conservation program of the Production and Marketing Administration. For the record, we would like to furnish the following information:

In the year 1950, the latest year for which we have complete information, it appears that $747,757 of conservation funds were used to assist farmers in the planting of 118,294 acres of trees on 28,636 farms. This expenditure represents twenty-eight one-hundredths of 1 percent of available conservation funds. Plantings represent an average of 4.1 acres per farm at a little more than $6 per acre.

Mr. JONES. That is what we want.

Mr. DAVIS. Now let me ask you a question. Out in your part of the country where you have those enormous productive forests, Mr. Mack, with those interests you have to look after your own replant-

ing, do you not? In other words, the planting of these trees in other sections of the country does not provide competition. It is more a matter of the management of the land so that you will avoid erosion, and will retard the flow of water, and so on and so forth. That is so because those trees that you planted will not return to the farmer many actual dollars, will they? I mean, he will not sell much of that timber, because he wants to keep it for the preservation of his land. Is that correct now?

Mr. WATTS. The primary purpose of ACP payments is generally for that sort of thing, but we do know that on most farms in the country at the present prices of timberland planted to trees may furnish a substantial income per acre.

If I might say so, we are not talking about the plantings that are done in the Douglas fir region by the industrial companies. We are talking about the small plantings on farms.

Mr. DAVIS. In those little farms most of that would be used for firewood and for use right on the farm itself, wouldn't it?

Mr. WATTS. Much of it would be.

Mr. MACK. A good deal of it goes to pulp mills.

Mr. WATTS. On the west side of the Cascade Mountains, in Washington and Oregon, that's right. They thin out the plantations and take the thinnings to pulp mills. This does furnish a very nice supplemental source of income to those farmers.

Mr. MACK. They can make earnings from those things in the off-season period when they are not preparing or harvesting crops.

Mr. WATTS. That is correct.

Mr. MACK. Is it not true, Mr. Watts, in these heavily forested areas, wherever the Federal Government owns timber and wherever the Forest Service has jurisdiction, that you require that the land be planted with new trees wherever old trees are cut? You call that practice the sustained-yield principle and insist on it on all lands where the Federal Government own the timber.

Mr. WATTS. That is right.

Mr. DAVIS. I suppose private enterprise introduced the same thing as a good business practice.

Mr. MACK. People have gone very extensively in the forested areas into what is called tree farming, an idea which was born in my county not more than 20 years ago. There are millions of acres now in tree farms, and where the young trees have been planted to replace old trees that have been cut down.

Mr. WATTS. The first tree farm was the Clements tree farm.

Mr. MACK. At Montesano.

Mr. WATTS. That's right. I happened to attend the dedication.

Mr. MACK. I was there too as a newspaper reporter.

Mr. WATTS. Supplementing land-treatment programs, we have found that in many places engineering measures are needed to help retard runoff and stabilize channels. Sometimes, especially in heavy storms of long duration, even the water that passes through the soil may get into the stream channels in time to contribute to a flood. To provide protection in these cases, it is necessary to supplement land treatment by retarding structures of various sizes and kinds. Aside from these channel structures, engineering measures are also essential as a direct part of land-improvement programs, to divert con-

centrated runoff from gullied slopes, and to provide quick protection while the soil-stabilizing vegetation is taking effect.

As indicated by Mr. Brannan flood-control surveys are carried on by the Department of Agriculture to plan watershed improvement programs, including work on forest and range land. In this work the Forest Service assumes leadership for the Department of Agriculture in a large number of watersheds throughout the United States, especially in the watersheds where forest and range lands play an unusually important part in the control of floods and erosion. In addition, the Forest Service assists in the survey of watersheds where the Soil Conservation Service has leadership by providing the necessary information on forest and range lands.

One feature of our surveys may be worth reemphasizing. In all except the smallest watersheds investigated, we have to deal with large land areas, characterized by a great diversity of land conditions, kinds of use and problems. The millions of acres in any single watershed are composed of many different kinds of soil, vegetation, and land uses. As contrasted to major channel projects, this fact makes a much more complicated job of program planning. In approaching this job, therefore, our men have had a major problem in designing their surveys so as to obtain reliable quantitative program estimates at a reasonable cost.

For land treatment programs, this problem has been solved by efficient sampling procedures, generally similar to those employed with great success in agricultural surveys and research. Comparable accuracy in sampling estimates is obtained for needed minor structural programs of the kind employed on forest, brush, and range lands.

These flood-control surveys lead to detailed reports, recommending that watershed improvement programs be authorized by the Congress. Up to now programs of this kind have been authorized and are under way in 11 watersheds; the Forest Service is participating in the programs being set up in six of these areas.

You have already had an outline of the steps that are taken in organizing and executing watershed-improvement programs. For most features of the program the improvement work is handled by subwatersheds, which form convenient units for detailed project planning and contracting of work. Some exceptions to this scheme exist, however, in the forest-land parts of the program. For example, the fire protection at levels needed for flood prevention is worked out for the whole authorized area; and it may also be coordinated with the fire-control programs of adjacent drainage areas.

The Department works cooperatively with State forestry organizations in planning and carrying out forest-land improvement measures on non-Federal lands. Before work is started a cooperative agreement is entered into between the Department and the State agency concerned. The agreement outlines the work to be done, indicates who will do the work, its estimated cost, and how the costs are to be shared, covers budgeting and inspection arrangements and such other matters as are necessary to fully cover the responsibility of the Federal and State Governments. The State agencies may, as seem mutually desirable, enter into agreements with local units of government, such as soil-conservation districts, with respect to the details of planning and carrying out the forestry phase of the work.

In addition to its work on the six authorized watershed-improve-

ment programs, the Forest Service has expended approximately $200,000 of flood-control funds on nine emergency projects under the authority of the Flood Control Act of 1938 and subsequent acts. Each of these projects was occasioned by a forest fire which, by denuding mountain watersheds of vegetation, created unusual and serious temporary flood threats to downstream property. Emergency measures included seeding of burned slopes with rapidly growing plant species, and construction of small debris-retaining structures where necessary to afford downstream protection until the upper slopes became revegetated.

May I say here that most of those, which were emergency projects, were in California, where they had brush fires in the hills above the citrus country, where the values are so tremendous, and a good deal of that money was spent for airplane seeding of such vegetation as mustard, which, as you know, will take effect pretty fast; and it has been quite satisfactory.

Your committee has asked about the relationships of our action-program costs to cost estimates as submitted in our survey reports. With the exception of necessary increases to cover the general cost rises due to inflation, the over-all estimates in the survey reports for work to be performed by the Forest Service have been reasonably reliable.

In some cases program revisions have been made to capitalize on newer and better methods of procedure which have subsequently been developed. To illustrate, new methods in fire control made since the original flood-control report was prepared for the Los Angeles watershed have been utilized. The substitution of helicopter transportation for ground transportation in fire suppression and faster and more effective communication by radio have eliminated the need for about three-quarters of the mountain fire-control roads and telephone lines considered essential 10 years ago. Therefore, that work has dropped off.

Moreover, the elimination of these roads will reduce unavoidable erosion always present in cut and fill slopes along highways and roads and eliminate fire hazards created by heavier public use.

The survey report for the Potomac River watershed recommended intensification of forest-fire control in portions of each of the four States partly included in the project area. Subsequent to the preparation of the report, the States concerned have increased the intensity of their fire control. The protection now being given is satisfactory for flood-control purposes in all but a small section of the watershed. The fire-control program was therefore reduced. In the Little Tallahatchie-Yazoo watersheds there have been substantial county and State contributions to the fire-control program which have materially reduced the amount of Federal participation originally contemplated.

In the cases I have just mentioned, it has been possible to install program measures at a cost which is less than was estimated in the report. On the other side we have instances in which the program originally planned needs modification to meet changing problems. The most important example that I can cite is the work that needs to be done to stop erosion and runoff that is caused by skid trails and logging roads. This problem has become much worse in recent

years, especially in the East, because of increased use of tractors and bulldozers in the woods.

It says here "especially in the East," but it is also especially wherever they use this heavy power machinery in mountain country.

In former years most of the skidding was done by horses, with only moderate disturbance of the forest soil. Now, with heavy mechanical equipment, the job of laying out skid roads that will not develop into great gullies is far more difficult. Measures to prevent erosion and to dispose safely of drainage from these roads and trails are needed.

We have a problem not only in the areas that are being logged with this new equipment but also in areas that have already been logged. Various measures are needed to heal eroding skid roads that are no longer used. The most effective way is by revegetation, gully plugs, and diversions which will keep the water from cutting deeper channels in the old skid roads. In most of the reports now in preparation we are recommending that the Federal Government assist in work of this kind.

We are also finding that some of the earlier reports did not lay enough stress on tree planting and revegetation. In the authorized resurveys of the Potomac and the Coosa, we anticipate that more emphasis will be laid on these two measures. In the Little Tallahatchie-Yazoo watersheds we are also putting more stress on the intensification of forest management which will improve the forest floor.

In closing this statement, I would like to emphasize, as strongly as I can, the fact that practically all the water we use and have to worry about falls on the land. The condition of the land as it receives this falling water has a very important effect upon water behavior. The Department of Agriculture program for improvement of watershed conditions is a vital part of a national water-management program.

Thank you, sir.

Mr. JONES. Mr. Davis.

Mr. DAVIS. No questions right at this point.

Mr. MACK. Mr. Watts, how much timber do we have in the United States?

Mr. WATTS. All we have now of commercial quality is about 1,600 billion board-feet of saw timber.

Mr. MACK. That is 1,600,000,000,000 feet?

Mr. WATTS. Yes.

Mr. MACK. Of that, how much does the Federal Government control?

Mr. WATTS. Just about one-third.

Mr. MACK. I saw a figure somewhere the other day that the Forest Service has jurisdiction over 256 billion feet.

Mr. WATTS. It is larger than that. It is about 522 billion board-feet.

Mr. MACK. And the other agencies that control a large amount of the timber are the Park Service and Indian Bureau. Are there others, such as the Oregon Railroad?

Mr. WATTS. There are some smaller ones.

Mr. MACK. The Forest Service is the agency that controls the largest amount of timber?

Mr. WATTS. That is right.

Mr. MACK. In your opinion, is this sustained-yield policy working out well?

Mr. WATTS. So far as our Federal lands are concerned, yes. I think generally our Federal lands—and that is based on surveys—are being very well handled. Speaking for the national forests, we are now cutting just about 5 billion board feet a year. As soon as we can get the access roads into those back-country areas in the mountains, we want to increase the cut on the national forests to about 6½ billion board feet per year. The country and the forests and our economy would all benefit by that, you see.

Incidentally, it may interest you to know that our receipts from the sale of stumpage in the national forests this year will be about $62,000,000 or $63,000,000.

Mr. MACK. One-quarter of that goes to the States and counties in the area where the timber is taken off.

Mr. WATTS. That is correct.

Mr. MACK. At the present time are we growing as much timber as we are cutting off the land, both private and public?

Mr. WATTS. No, sir. So far as saw timber is concerned, we are depleting our forests about 1½ times as fast as we are growing it.

Mr. MACK. The objective of the Forest Service and the other agencies of the Government, of course, I think is to bring about a situation where we will be growing trees as fast as we cut them; is it not?

Mr. WATTS. Congressman Mack, I am glad you brought that up because my own objective as chief of the Forest Service is something way beyond that. We have some 460,000,000 acres of commercial forest land in this country.

Mr. MACK. How many acres?

Mr. WATTS. 460,000,000 acres of commercial forest land available for growing commercial timber. That is sufficient land to grow much more than we are now using. I think the land can be made to produce under reasonably good practices twice as much as it now produces.

As a result, that is my objective: To do all I can to get our land ultimately to produce to the maximum. In that way we do not have a static America from the standpoint of forest production. We can continue to grow and expand if we can put our land to work.

Mr. MACK. If all of the timber in the United States were to be sold now at the present time at market value, the value of that timber would run into $20 billion to $40 billion; would it not?

Mr. WATTS. I believe it would be more than that.

Mr. MACK. That is 1,600 billion feet.

Mr. WATTS. The average price on the national forest is $14 a thousand. If anyone can use big figures, they can figure it out.

Mr. MACK. At $1 a thousand feet the amount of timber in this country would be worth $1,600,000,000. Therefore, it would be worth 14 times that, or roughly in excess of $20,000,000,000.

Mr. WATTS. That is right.

Mr. MACK. When Americans first went into the lumbering business, lumbermen cut down the forests and took the logs to the mills. Once the timber was cut off, these forested districts became ghost communities. The schools, hospitals, and homes all were deserted. I know the Forest Service has been trying to get away from that ghost-town idea in the forest regions.

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In 1944 Senator McNary secured the enactment of a bill which allowed the Forest Service to set up what are called sustained-yield units. In these units the timber within them is allocated to a particular community or group of communities, and they take off their timber at the rate of one-eightieth or one-one hundredth each year. There are six such units in the West now. Among them are two in Washington, one in Oregon, one in California, one in New Mexico, and one in Arizona.

Are these sustained-yield units to support communities and sustain the industries in them, working out well? You have six now. Are you contemplating some others? If so, how many?

Mr. WATTS. It would be impossible to say how many we will ultimately have. I recall two under consideration on the Columbia River now, one at Stevenson and one at Hood River. The hearings will be held later this year on those.

Mr. MACK. One in Oregon and one in Washington?

Mr. WATTS. That's right. It is hard to say what percentage of our forest land in the West will ever be covered by this type of unit, I would guess it would never be more than 25 percent of our national-forest timber. To take an illustration which you know, let us consider the country which is tributary to Portland, Oreg. I don't know how you would reach a judgment as to where that timber should be manufactured. When it gets into the Willamette River it is equally adjacent to all mills on the lower Willamette or on the Columbia River. In such cases we favor making the forest land grow all that it will and let competition between manufacturers determine who gets it.

Mr. MACK. I think your Department gave me some figures several years ago showing that, from the time the logger moves into the forest to take out the trees until the manufacturing processes are completed, 57 percent of the tree is wasted. I figure that millions of railroad carloads of material would be created if that waste could be turned into useful products.

You did set up a sustained-yield unit in Shelton, Wash., and it has encouraged manufacturers there to find uses for this waste material. I visited a plant recently in the city of Shelton that is making wallboard and acoustic tile. This plant employs 360 people and is using mill waste that had previously been burned.

These sustained-yield units in the communities do encourage the industries which are located there to make greater utilization of the waste materials and to make studies which will result in getting more usable products out of every foot of a log. Is that not true?

Mr. WATTS. That is correct. It is part of the agreement we enter into. We will not establish a sustained-yield unit unless it does visualize fuller and fuller use of the tree.

Mr. MACK. I also visited Longview, and there I saw a timber company taking the bark off a tree and converting that into useful products. They were grinding it up into a sawdust which is used for holding moisture. I saw them forming other sawdust to make plywood and they were making it into a very fine war industry being employed in the making of plastics of various kinds.

Mr. WATTS. As a matter of fact, one of the rather encouraging things in the forest utilization field is the degree to which we are finding new and better ways of using wood. It is particularly true in the case of communities with what we call integrated industries. By this

I mean a combination of a pole and post treating plant, a pulp and paper plant, or a wallboard plant and sawmill, for example. Thereby they can bring in the small and poor quality logs and use each log for the most valuable purpose. It is a very fine development.

Mr. MACK. As you know, Mr. Watts, my district is the second largest in the amount of timber contained of any of the 435 Congressional districts in the United States, being exceeded only by that represented by Mr. Ellsworth of Oregon.

Mr. WATTS. Yes, sir.

Mr. MACK. I am very familiar with most of the lumber management people and the union leaders throughout my district, and I want to say to you that the reputation of the Forest Service is the highest of any of the Federal agencies among the people in my district.

Mr. WATTS. Thank you, Mr. Mack.

I think I should tell the rest of the committee——

Mr. DAVIS. Make a little note of that.

Mr. WATTS. I think I should say to the committee I myself was regional forester in the Forest Service in the Northwest for several years, and therefore I happen to know that country out there rather well.

Mr. DAVIS. Mr. Watts, I saw some nice looking furniture made out of sawdust recently.

Mr. JONES. Mr. Curran.

Mr. CURRAN. Mr. Watts, there are 11 projects for flood control under way under the jurisdiction of the Department of Agriculture, in 6 of which the Forest Service participates. There are 10 reports that have been submitted and referred to the Public Works Committee since last October. As I understand it, the Forest Service takes the leadership in some of the programs and the Soil Conservation Service in others. Can you tell us in which of these two categories, both the going projects and the pending projects, the Forest Service has taken the leadership?

Dr. HARPER. In general the Forest Service takes the leadership on flood control surveys where the land is predominantly forest land. It may be national forest, or it may be private forest, or range lands. As to the actual projects where we are carrying out flood prevention work I wonder if Mr. Salmond could list those, please.

Mr. JONES. Mr. Salmond, give your full name to the reporter, please.

STATEMENT OF GORDON R. SALMOND, CHIEF, DIVISION OF WATERSHED MANAGEMENT, UNITED STATES FOREST SERVICE, DEPARTMENT OF AGRICULTURE

Mr. SALMOND. I am Gordon R. Salmond, Chief of Division of Watershed Management, United States Forest Service.

Mr. Chairman, the actual going projects, as you know——

Mr. CURRAN. First let us get this cleared up. As I understand the testimony, you have certain territory that has been assigned to you by the Secretary in which to carry out watershed programs. Is that correct?

Mr. SALMOND. The territory is assigned for leadership to make surveys. In the actual carrying out of the programs the Forest Serv-

ice and the Soil Conservation Service work jointly. The Forest Service is responsible for the work that is carried out on private forest lands and on all lands in the national forest, and the Soil Conservation Service on the agricultural, pasture, and private range lands outside of national forests. It is a joint effort.

Mr. CURRAN. But in the national forests you do all of the work?

Mr. SALMOND. Yes. All of the work in the national forests.

Mr. DAVIS. Mr. Chairman, they continue to talk about surveys. I don't know what the use of the word is there.

Mr. CURRAN. You stated that the Forest Service would take the leadership in some surveys. Of these 10 pending reports are there any in which the surveys have been carried forward under the leadership of the Forest Service, or are they all Soil Conservation Service?

Mr. SALMOND. I will have to ask one of the men in charge of surveys to answer the question.

Mr. WILM. Could you repeat the question?

Mr. CURRAN. There are 10 reports now pending which have been submitted since last October. Which of those reports have been made under the leadership of the Forest Service?

Dr. HARPER. The Sevier report has been made under the leadership of the Forest Service.

Mr. CURRAN. Which is that?

Dr. HARPER. The Sevier Lake watershed in Utah. The Santa Maria River report is, I believe, another that is on the way at the present time. It was being reviewed recently by the Federal Inter-Agency Committee. I am not sure whether it has gone up to Congress yet.

Mr. JONES. There are 10 pending. How many have been submitted to the Congress?

Dr. HARPER. May I read the 10?

Mr. JONES. If you prefer, let us take the 11 that are already active on which work is being done.

Mr. DAVIS. Mr. Chairman, I believe Mr. Dykes testified on yesterday there was a lag of about 8 to 10 years between the time a survey was authorized and enough money was appropriated to go through with it. It strikes me in that period of time if you make a survey and proceed to go to work, the conditions could very well change substantially.

Mr. JONES. No. The question is, Who did the survey on those that have already been authorized, the Forest Service or the Soil Conservation Service?

STATEMENT OF GEORGE R. PHILLIPS, FLOOD CONTROL OPERATIONS OFFICER, DEPARTMENT OF AGRICULTURE

Mr. PHILLIPS. Those reports were prepared before the war and before the present arrangement of agency responsibility was in effect, so that the same arrangement did not prevail at the time those 11 were prepared as prevails now and as has prevailed since the time of the war.

The programs generally recommended are installed in part under the leadership of the Forest Service and in part under the leadership of the Soil Conservation Service, the Soil Conservation Service carrying out activities in all 11 of those watersheds, and the Forest Service in 6 of them.

The ones that have been recently submitted are as follows: Green River, prepared by the Soil Conservation Service; Grand (Neosho) River, by the Soil Conservation Service; Brazos River, by the Soil Conservation Service; Pee Dee River, by the Soil Conservation Service; The Sny, by the Soil Conservation Service; The Queen Creek, by the Soil Conservation Service; Sevier Lake by the Forest Service; Scioto River, by the Soil Conservation Service; and The Delaware River, by the Soil Conservation Service.

Mr. JONES. Dr. Watts, I want to ask you about one report, the Green River report that is now pending in House Document 261, the report filed by Dr. Bennett, Chief of the Soil Conservation Service, in which you concur. I find this statement:

> Concurrence in this report does not constitute endorsement by the Forest Service of ACP payments as a major means of obtaining sound forestry practices on private lands.

Would you explain that for us, please?

Mr. WATTS. I would be glad to, sir. By saying "major" I think I mean exactly that. I think I ought to tell you quite frankly that up to the last couple of years I personally have not been so enthusiastic as some with respect to ACP payments. With the reorganization of the Department by Secretary Brannan 2 years ago the Forest Service was brought in more closely with that work. We are now actively working with the Production and Marketing Administration in handling and helping to handle, and advising on that work. I now see much more promise in that field than I formerly did.

I want to be completely frank with you that in certain phases of the forestry work, because it is a long-time crop not uncommonly requiring as much as 50 to 75 years to produce, I have believed that some degree of public control is necessary. A degree of public control is necessary if large investments of public funds are to be made.

Mr. JONES. Do you believe the same objective can be accomplished without the ACP payments?

Mr. WATTS. There are so many simple things that can be speeded up by use of the ACP payments that I believe are highly desirable. I will mention some of those: Tree planting——

Mr. JONES. Then you do not entertain the same notions now that you did when you concurred in this report filed on the Green River?

Mr. WATTS. To a lesser extent now. I still believe that to get the full degree of forestry will require more than incentive payments. We cannot obtain our full program through incentives.

Mr. JONES. Do you believe the work can be accomplished with the technical assistance and normal payments under the general legislation of ACP payments in the watershed? I will repeat: Do you believe the same objectives can be accomplished in these watersheds by the normal ACP payments now provided by law?

Mr. WATTS. In part, sir. Not fully, but only in part they can be.

Mr. JONES. What do you claim can be accomplished without an accelerated ACP system of payments? Do you think you can make substantial progress?

Mr. WATTS. Substantial?

Mr. JONES. Yes. I am talking about these accelerated amounts of payments, Doctor, and not the normal payments that are provided for in the general law.

Mr. WATTS. I think I would say something like this: Let us consider the full amount of benefits that we want to get through better forestry practices in this country. I think I could not submit proof of it—we might get about one-third of the full objective through our normal cooperation with the State forestry departments; we might get another one-third from ACP incentives, and the last one-third of the benefits we seek to get would not be had by either one or both of those. It would come only through some sort of public controls, so that it would not be possible for the individual landowner to destroy all of the benefits during the years it takes to grow the forest crop. Perhaps one-third each.

Mr. JONES. Now, these agreements that are made with the individual farmer where a watershed program calls for a 10-year program, does that agreement extend beyond the 10-year period?

Mr. WATTS. I believe not, sir.

Mr. JONES. So it would be a 10-year period and after replanting the trees, then at the expiration of that time he would be at liberty to cut or use the forest lands in any way he saw fit?

Mr. WATTS. I believe that is right, sir. That is the reason why I spoke of the need for control.

Mr. SALMOND. Mr. Jones, the agreements with the farmers are made generally through the Soil Conservation District supervisors. The farmer undertakes to carry out the plan on his farm in the interests of good conservation. The objective of that plan is to carry it out primarily for the benefit of the farmer and for the benefit of the land and water resources. The farmer cannot be forced to maintain and carry out all of the provisions except perhaps by force of public influence, but it is the intent to get him to go along as long as possible with the plan that he accepts.

Mr. JONES. In these agreements, supposing the owner who entered into the agreement sells his land? Does the agreement you make carry to the land itself, or to the person making the agreement? In other words, is it an in personam agreement or an in rem agreement?

Mr. SALMOND. I think it is the concern of the individual owner.

Mr. JONES. Why is the contract not made to cover the land rather than the person who enters into the agreement?

Mr. SALMOND. I do not know whether I can answer that fully, but I understand that it probably is not legal to enter into an agreement which binds future owners of property that way. It may be someone from the Soil Conservation Service could have a better answer for that.

Mr. JONES. Where is your lawyer? Do you have a lawyer here? I hope you all have better lawyers than that down in the Department of Agriculture, because if they made an agreement they could certainly make it enforceable for them to carry out the practices. Why is it not possible in these programs that require all of these 10-year agreements to have the contracts running with the land to protect the Federal investment made in those areas?

Mr. Dykes, can you answer that?

STATEMENT OF J. C. DYKES, DEPUTY CHIEF, SOIL CONSERVATION SERVICE, DEPARTMENT OF AGRICULTURE

Mr. DYKES. Under these agreements we have two situations. For the individual land-treatment practices, such as terracing and tree planting, and that sort of thing, the agreement is with the landowner and is not binding on the future of that land.

With regard to the detention structures, and similar improvements, and that sort of thing, they are recorded and are binding on the land as compared with the individual farm practices which are binding only on the present owner.

Mr. JONES. Do you not have a different situation where you have forestry stands, because the commercial interests are always looking at that stand of timber and wanting to get hold of it. So if somebody else comes in there and buys it and then keeps it for some time, he can thereafter destroy the whole program you talked about here. That has all gone down the river.

Mr. WATTS. That is entirely possible, sir, and that is why I mentioned the fact that in figuring our benefits we try the best we can to estimate what will be the permanent flood control benefits. As I said before I believe we needed some type of legislation that would encompass a degree of control over cutting and other practices on forest lands.

May I say that in some of our States we already have that. In the State of Washington for example, Mr. Mack, you have a fairly satisfactory State control law. The State of Oregon has a fairly satisfactory law. Most of the States do not. This happens to be one of the major programs that the Forest Service is seeking.

Mr. JONES. You think you should rely on the State legislatures to enact legislation along that line rather than the Federal Government?

Mr. WATTS. I personally think the Federal Government would have to be involved to make it the most effective. The Forest Service program for forestry in this country contemplates three things: One is that every proper assistance be given to the private landowner to enable him to practice forestry. The second one is public ownership of those lands where the growing of a forest crop is so slow that it is not attractive to private capital. Such land should be in public ownership, State or Federal, including the consolidation of our national forests.

The third thing we need in this country to get a fully rounded forestry program is a degree of public control of practices on private land. The forest crop is so long in maturing that all the work you do can be destroyed any time from planting of the seedlings until the crop is harvested.

Mr. JONES. That brings about the larger program of land management. As far as the Federal Government is concerned we should see that it is preserved and protected in those areas for the simple reason that when the crop itself matures we have lost any control over it.

Mr. WATTS. That is right, sir, and with the exception of some few States we do not have the necessary legal authority to control that. I am not unmindful, sir, of the fact that a great deal can be accomplished in America, in forestry as in everything else, through technical assistance, and education of our forest-land owners. I must say

that tremendous strides have been made in the last 10 years on the part of the larger owners. As a matter of fact, the larger owners—and they also own watershed lands—employ more technical foresters today than the United States Forest Service, and they are in the main doing a good job.

Mr. JONES. And you work in connection with those people?

Mr. WATTS. Directly, but more particularly through the State Forestry organizations.

Mr. JONES. You are eliminating the fire-observation posts, are you not?

Mr. WATTS. Not eliminating them. We never will. We are reducing the number by the use of airplanes. We are always going to need both, but we have cut out a large number of our lookouts and substituted planes.

Mr. JONES. Going back to the school program, I noticed in a lot of the counties throughout the country you have had foresters who have had either 1 or 2 years of college and have had a great deal of experience in forest work. Would it be worth while for the Forest Service to give them further education?

Mr. WATTS. It would be worth while to give them further training. We are not in the school business, of course, but it would be worth while in the South, to provide what is called a ranger-school type of training.

Mr. JONES. I take it then that the two major problems you face in the southeast part of the country is first, fire protection and second, reforestation?

Mr. WATTS. The third one, of course, is the good management of the land when the timber is being cut.

Mr. JONES. Doctor, we are grateful to you for your appearance here today.

Mr. MACK. Mr. Chairman, I have several questions.

Mr. Watts, does the Forest Service have any authority in law to trade growing timber for private real estate, such as land, farm buildings, tourist resorts, or summer cottages?

Mr. WATTS. We certainly have such authority in law. We can trade for timberland and if the land has buildings on it we can pay whatever they are worth.

Mr. MACK. I have had some of the same information from the Park Service, which has been acquiring certain farms and certain summer homes in the Washington area. I have been greatly concerned that that practice in land acquisition constitute a bypassing of the authority of Congress and also, possibly may lead to some charges that the sales were not made by competitive bidding.

As I understand the way the Park Service carries out this activity, it says to a logger, "If you will acquire this summer home or this summer tourist resort we will trade you timber from the park land for this property." It makes the logger who gets possession of that particular piece of private property the only person who can bid on this timber. It seems to me the Government would get considerably less than it would on the competitive market. The thing the Park Service should do, it seems to me, would be to secure authorization from Congress to acquire the land and then sell its timber at competitive bidding.

Mr. WATTS. The Forest Service land exchange authority is covered in some 75 different bills and one broad over-all bill.

Mr. MACK. It is very limited, I suppose.

Mr. WATTS. We have done a good deal of it over the years. The bulk of it is in the West. We are not doing as much now because the timberland owners in the West now are holding on to the land. It has been very valuable in blocking up the holdings of the forestland owners and of the Forest Service.

Mr. MACK. The General Accounting Office several years ago made the statement that we have 14 different Federal agencies managing and directing the operations in our Federal forests. Do you have any opinion as to whereby we could decrease the number of these agencies and place a larger amount of this timber in the hands of the Forest Service, which is more experienced in the conservation and marketing of timber than any of the other agencies?

Mr. WATTS. Congressman Mack, the answer to that question is, "Yes." I testified at length with regard to that before the Senate Committee on Expenditures recently.

Mr. MACK. Do you think that the number of agencies could be decreased and that more of the enormous holding of Federal timber should be placed in the hands of the Forest Service?

Mr. WATTS. At that time I recommended amongst other things that the timber and land handled by the Bureau of Land Management, including the Oregon and California land in Oregon, be transferred to the Forest Service for administration.

Mr. MACK. A great many of these other agencies handling timber do not follow the same sustained yield practices that the Forest Service does.

Mr. WATTS. Not the same. I am not criticizing the land management of any agency. I think it is just sound government administration to have one agency doing the work for the Federal Government in one specific field.

Mr. MACK. I am quite familiar with the Olympic National Park, which is in the State of Washington and which covers an area larger than the State of Rhode Island, and which contains 17 billion feet of timber. There is a good deal of that timber that is overripe, it should be taken out under the sustained yield principle. But under Park Service regulations this overripe timber is permitted to stand there and rot which is an economic waste that costs the people of this country millions and millions of dollars.

Mr. WATTS. I am sure, Congressman, we would both agree this country is wealthy enough for some of that wonderful old rain forest to be in a park, even if it rots down. The argument comes, I think, with you and others as to how much of it do we need for parks.

Mr. MACK. I agree with you we should have a large park there, but not one larger than the State of Rhode Island containing 17 billion feet of timber.

Mr. JONES. The last time it was larger than the State of Ohio.

Mr. MACK. No. You are talking about something else.

Mr. JONES. Without objection, there will be placed in the record a copy of the Department's letter of January 7, 1952, replying to several questions. The committee stands adjourned.

DEPARTMENT OF AGRICULTURE,
OFFICE OF THE SECRETARY,
Washington, January 7, 1952.

HON. ROBERT E. JONES, Jr.,
Chairman, Special Subcommittee to Study Civil Works,
House Committee on Public Works,
Washington, D. C.

DEAR MR. JONES: I am enclosing answers to the questions you sent Secretary Brannan with your letter of October 19, 1951. Should you have any further questions please feel free to call upon us.

Secretary Brannan again wishes to assure you of the Department's desire to assist your subcommittee in the important work it is doing.

Sincerely,

RALPH R. WILL,
Administrative Officer.

ANSWERS TO 15 QUESTIONS FOR THE SPECIAL SUBCOMMITTEE TO STUDY CIVIL WORKS, HOUSE COMMITTEE ON PUBLIC WORKS

1. What is the nature of flood-control work undertaken by the Department?

The flood-control work of the Department of Agriculture involves the investigation of watershed conditions, practices, and problems; the determination of corrective measures needed for runoff and water-flow retardation and soil-erosion prevention on watershed lands and associated watercourses; and the installation of watershed improvement measures. This work applies primarily to upstream areas and tributary streams and complements the main stream flood-control projects of the Corps of Engineers and other agencies. It provides the only protection available to headwater flood plain areas. A watershed program or project usually consists of two broad interrelated types of works of improvement: (1) land treatment measures, and (2) supplemental small watercourse measures. In formulating a watershed improvement program these two groups of measures are integrated to achieve an effective combination of measures for the purpose of reducing flood and sediment damages. Each group is the complement of the other and both are essential to the efficient operation of the installed program.

Land treatment measures increase infiltration and the water-holding capacity of the soil, retard runoff, and reduce soil erosion, thereby allevitating flood and sedimentation damages. An inherent characteristic of these measures is that they also reduce damage to the land from erosive action of rainfall and runoff and they maintain or improve the productive capacity of the soil thereby yielding large "on site" or conservation benefits through increased production. Thus, this group of measures serves a multiple purpose rather than the single purpose of flood control.

Examples of land treatment and practices are: Adjustments in land use in accordance with land capability; crop rotations, contour farming, terracing, minor gully stabilization, strip cropping, establishment of farm waterways and permanent cover crops, and pasture improvement on crop and pasture lands; and adequate protection from fire, improved nondamaging practices of timber cutting, logging, and range management, and improvement and establishment where needed of new forest and range cover by reforestation and seeding on forest and range lands.

Supplemental small watercourse measures store water, stabilize channels, and control sediment thereby alleviating flood and sediment damages to agricultural bottomlands, towns, roads, and other works such as waterworks and reservoirs. This part of the program, consisting of both structural and vegetal measures, controls the flow of water and the movement of sediment from the points of collection in defined channels below farm fields to the main stems of the rivers. Some of these measures also are multiple purpose. Examples of supplemental small watercourse measures are: interfarm and subwatershed waterway improvements, watercourse grade stabilizing structures, vegetation and structures for major gully control, debris basins, floodwater retarding dams, watercourse diversions, channel clearing and straightening, and streambank stabilization. Most of these measures may be integral parts of the water management system of an individual farm or group of farms. For example, terraces, terrace outlets, a gully control structure and a small dam may be necessary for the control of water originating on two or three farms. Other measures needed for adequate protection such as floodwater retarding dams and tributary channel

improvements may be independent of other structures as well as the land treatment measures.

The land treatment measures included in these programs are of the same types as those being carried out through broad national programs administered by the Department of Agriculture through the Soil Conservation Service, Production and Marketing Administration, Forest Service, and to a lesser extent by other Federal agencies. In the flood-control program the measures are adapted to the specific needs of the watershed, and they are applied more rapidly and intensively to accomplish flood-control objectives on a watershed basis. Also a concentrated effort is made to provide for the concurrent installation of all land treatment measures in a given area in coordination with the small watercourse measures, whereas in broad national programs where there is seldom a watershed plan, such coordination is not achieved. Furthermore, very few structures designed specifically to reduce the damages in a watershed are installed under the national programs.

On privately owned lands the flood-control program is carried out in cooperation with individual landowners and operators and with soil-conservation districts, or other State and local agencies such as flood-control districts, State forestry departments, conservancy districts, etc. The local agencies negotiate agreements with private landowners and operators who participate financially in the program and on whose land the works of improvement are installed. The Federal Government pays the entire cost of flood-control programs on federally owned land. It shares with State and public agencies the costs on other public lands.

Except for a few basin-wide measures like fire control, the Department of Agriculture's flood-control programs ordinarily are carried out in accordance with subwatershed work plans. Subwatershed plans are made for small units or subwatersheds of a larger watershed authorized by the Congress. These areas may vary in size from a few hundred acres to 100 square miles or more. Subwatershed priorities for installation of works of improvement are based on the physical needs as determined through field investigation and on the readiness of the local people to cooperate in the installation of measures.

The subwatershed work plans show the location of all structural measures and other works of improvement, and delineate areas for special vegetal treatment. They also show the quantities and estimated costs of needed land-treatment measures. Designs and specifications are drawn for the supplemental small watercourse measures, agreements are made as to sharing of costs, and the measures are generally installed under contracts let by the responsible Federal agency. At the same time, additional technical and financial assistance is provided to landowners and operators to help accelerate the application of land treatment measures so that a balanced and complete program is achieved on each subwatershed, usually within a period of 1 to 5 years from the initiation of operations. Some types of land-treatment measures should be installed before the supplemental small watercourse measures.

The work proceeds from one subwatershed to another at a rate depending upon the availability of funds and in accordance with the priorities developed in cooperation with local people, until treatment has been completed over the entire watershed authorized by the Congress. The entire period of treatment is generally recommended in survey reports to cover a period ranging from 10 to 30 years. The rate of annual appropriations made to date for work on watersheds authorized for operations by the Flood Control Act of 1944, as amended, indicates, however, that the installations will not be completed in less than 30 to 50 years in most of those watersheds.

2. What authority in law is there for similar works under the Soil Conservation Service, the Forest Service, or other element of the Department? What limitations are there on use of appropriations for such similar works?

Works similar to those carried out under the flood-control acts are authorized by various other acts. The flood-control program is distinguished from other programs of the Department in that it has as a specific purpose the reduction of floodwater and sediment damages. Furthermore, the flood-control program is planned on watershed units rather than on a basis of county, State, or other governmental subdivisions.

Works similar to those included in the flood-control program are authorized to be carried out by—

(*a*) Soil Conservation Service under authority of the acts of April 27, 1935 (49 Stat. 163, 16 U. S. C. 590–a–f); August 28, 1937 (50 Stat. 869, 16 U. S. C. 590r–x); July 22, 1937 (50 Stat. 525, 7 U. S. C. 1010–1012); August 11, 1939

(53 Stat. 1418, 16 U. S. C. 590y–590z 10); and October 24, 1951 (Public Law 202, 82d Cong., 1st sess.).

(*b*) Forest Service under authority of the acts of March 3, 1891 (26 Stat. 1103, 16 U. S. C. 471); June 4, 1897 (30 Stat. 34, 16 U. S. C., 473, 475–482, 551); March 1, 1911 (36 Stat. 962, 16 U. S. C. 513, 515, 516, 521, 552, 563); June 7, 1924 (43 Stat. 653, 16 U. S. C. 471, 505, 515, 564–570); May 22, 1928 (45 Stat. 699, 16 U. S. C. 581–581i); June 9, 1930 (46 Stat. 527, 16 U. S. C. 576, 576a, 576b); July 22, 1937 (50 Stat. 525, 7 U. S. C. 1010–1012); March 29, 1944 (58 Stat. 132, 16 U. S. C. 583–583i); June 29, 1948 (62 Stat. 1106), 1949 Reorganization Plan No. 7, effective August 19, 1949 (63 Stat. 1070, 23 U. S. C. 23); October 11, 1949 (63 Stat. 762, 16 U. S. C. 581j, 581k); April 24, 1950 (64 Stat. 82, 16 U. S. C. 490, 500, 504, 504a, 555, 557, 571c, 572, 579a, 580c–580l, 581); and August 25, 1950 (64 Stat. 471, 16 U. S. C. 568c, 568d).

(*c*) Production and Marketing Administration under authority of the acts of February 29, 1936 (49 Stat. 1148, 16 U. S. C. 590g–590q); and October 24, 1951 (Public Law 202, 82d Cong., 1st sess.).

An example of the broad authority of the Department of Agriculture under these acts is found in the act of April 27, 1935, popularly known as Public, 46, which provides that the Soil Conservation Service is authorized "to provide for the protection of land resources against soil erosion and for other purposes," and which declares it to be the policy of Congress "to provide permanently for the control and prevention of soil erosion and thereby to preserve natural resources, control floods, prevent impairment of reservoirs, and maintain the navigability of rivers and harbors, protect public health, public lands, * * *." Another example is the authority contained in the Department of Agriculture Appropriation Act, 1952, for "making conservation surveys and plans and establishing measures to conserve soil and water (including farm irrigation and land drainage and such special measures as may be necessary to prevent floods and the siltation of reservoirs) * * *."

Activities of the Forest Service related to those included in the flood-control program are authorized under a series of acts beginning in 1891. The attached pamphlet contains these acts.

With respect to limitations on the use of certain appropriations, the act of June 7, 1924, provides that expenditures of Federal funds under the pertinent sections in any State during any fiscal year, except for certain preliminary investigations, shall not exceed the amount expended by the State for the same purpose during the same fiscal year. (See 16 U. S. C. 565, 567, 568.) The act of August 25, 1950, contains a similar provision. (See 16 U. S. C. 568d.)

The act of February 29, 1936, as amended, provides that beginning with the calendar year 1939 no total payment for any year to any person shall exceed $10,000. This limitation has been superseded by smaller limitations in varying amounts which have been included in subsequent annual appropriations acts for the Department of Agriculture. The Appropriation Act for the Department for fiscal year 1952 (Public Law 135, 82d Cong., 1st sess.) provides that in carrying out the 1952 program under the act of February 29, 1936, no participant shall receive more than $2,500. The Appropriation Act also contains provisions for the apportionment of these funds for expenditures in the several States.

The Department's policy of constructing very few structures under the authority of these acts imposes a limitation on the use of appropriations for national as contrasted to flood-control programs.

3. How are surveys for flood control initiated?

Before beginning a flood-control survey the Department of Agriculture must have legislative authorization. The Secretary of Agriculture is "authorized and directed to cause preliminary examinations and surveys for runoff and water-flow retardation and soil-erosion prevention on the watersheds" specifically named in the flood-control acts which include the watersheds of the rivers or waterways on which the Secretary of the Army is authorized to make preliminary examinations and surveys for flood-control purposes. On authorized watersheds the Department first makes a preliminary examination which is a reconnaissance investigation utilizing existing data and discussions with residents of the watershed to determine whether a remedial program of water-flow retardation and soil-erosion prevention appears to be sufficiently feasible to warrant further investigations. Negative reports of preliminary examinations are submitted by the Secretary to the Congress through the usual channels. Positive reports are submitted by the Bureau (Forest Service or Soil Conservation Service) responsible for the examination to the Secretary who considers them in establishing priorities for surveys. As funds become available for sur-

veys the Secretary administratively decides upon the watersheds to be surveyed.

Reviews of reports of surveys or of negative reports of preliminary examinations which have been submitted to Congress may be authorized by resolution of the Committee on Public Works of the House or Senate. Initiation of authorized reviews of reports is determined by the Secretary.

The flood-control survey aspects of general basin investigations such as in the Missouri River Basin are initiated in the same manner as regular flood-control surveys.

4. How are projects authorized?

After clearance through the Bureau of the Budget, the reports of surveys are submitted by the Secretary to the Congress and are referred to the Committee on Public Works.

Section 13 of the Flood Control Act of December 22, 1944 (58 Stat. 887), as amended, authorized improvement programs to be carried out in 11 specified watersheds substantially in accordance with the recommendations contained in the respective survey reports.

5. What constitutes an authorized project?

An authorized project or watershed improvement program is one which Congress has authorized to be carried out by the Department substantially in accordance with the recommendations contained in the applicable survey report. A flood-control project of the Department of Agriculture differs from the usual construction project in that it consists of numerous interrelated watershed improvement measures applied to the lands and tributary watercourses within a watershed.

6. What latitude for changes and modifications are considered to rest with the Administrator in carrying out an authorized project?

Since the improvement programs authorized by the Flood Control Act of 1944 were approved substantially in accordance with the recommendations contained in the survey reports the Secretary has some latitude in carrying out the works of improvement. Minor changes and modifications in the program described in the report may be made by the chief of the bureau responsible for the work under delegation of authority from the Secretary. Major changes and modifications may not be made without prior congressional approval. Whether a proposed change or modification should be considered as minor or major depends upon the facts and circumstances of each case.

7. What administrative official approves such modifications?

The chief of the bureau responsible for the installation of the works of improvement approves minor changes and modifications under delegation of authority from the Secretary. The Secretary approves recommendations of the bureau chiefs for major modifications before they are referred to the Congress.

8. Under what circumstances are modifications considered improper without returning to Congress?

As stated in answers to questions 6 and 7, major modifications of the program recommended in survey reports are considered to be improper without prior congressional consideration. Unusual physical changes in the watershed, new technical developments, or significant economic changes might require modifications either of the program or of the cost which it would be considered improper to make without returning to the Congress.

9. What data are given to the authorizing committee or to the Appropriations Committee subsequent to authorization of the project and prior to its completion?

A. *Authorizing committee.*—Works of improvement were authorized for 11 watersheds by the Flood Control Act of December 22, 1944. This act, as well as several subsequent ones, also authorized certain sums to be appropriated for the prosecution of the works of improvement. To aid in preparing the appropriation authorization the Department of Agriculture submits on request to the House Committee on Public Works financial information on the status of funds appropriated for works of improvement.

From time to time during the installaton of works of improvement, experience reveals a need for modifying or changing a program authorized by the Congress. As these occasions arise the Department submits to the authorizing committee technical data, supporting information, and recommendations relating to the re-

quested amendment or review of the program. Examples of occasions when data were submitted are:

(*a*) Buffalo Creek (sec. 16 of the Flood Control Act of 1946): Here information was presented as a basis for amending the 1944 Flood Control Act to include a program of channel improvement at added cost.

(*b*) Santa Ynez (Sec. 217 of the Flood Control Act of 1950). For the Santa Ynez watershed the information presented led to broadening the authorization to permit the Secretary of Agriculture to modify the authorized program at increased cost.

The House Committee on Public Works from time to time requests data from the Department relating to authorized watersheds in connection with its consideration of resolutions to authorize the review of reports. Such data were furnished, for example, for the Colorado (Middle) of Texas, the Potomac, and the Trinity watersheds.

B. *Appropriations Committee.*—Annually the Department submits to the Committees on Appropriations information concerning the status of works of improvement, by watersheds. The information consists of:

(*a*) Total estimated cost—original and as of recent date.

(*b*) Cumulative total of obligations through the last complete fiscal year.

(*c*) Estimated obligations during the current fiscal year.

(*d*) Estimated obligations during the next or budget year.

(*e*) Examples of performance of operations work.

(*f*) Summary of units of work accomplished to date. Beginning with the budget estimate for fiscal year 1953, it is planned to show such summaries for the last complete fiscal year (fiscal year 1951) and cumulative to the end of that fiscal year.

This information for fiscal year 1952, submitted in January 1951, is presented in the attached statement, "Flood control, Department of Agriculture." Items *a*, *b*, *c*, and *d* are presented in the table on page 419; items *e* and *f* on pages *423* through *430*.

In connection with emergency watershed improvements under section 216 of the Flood Control Act of 1950, the Department submits annually information on:

(*a*) Estimated obligations during the current fiscal year.

(*b*) Cumulative total of obligations through the last complete fiscal year.

An example is given in the table on *page 419* of the attached mimeograph flood control, Department of Agriculture, for fiscal year 1952.

10. What nature of public works for flood control are authorized by Congress without reference to the Public Works Committee?

Many of the land treatment measures installed mainly for other purposes under the several acts mentioned in answer to question 2 also produce flood-control benefits. These programs are not public works in the usual sense but they represent a considerable body of closely associated work authorized by Congress under legislation originating in the Committee on Agriculture. In addition, erosion control, structures, and occasionally small dams to service a multiple purpose are built under the authorization of these acts, and these too are part of national programs within the jurisdiction of the Committee on Agriculture. There are some instances where appropriation acts for the Department provide that funds appropriated under the flood-control item may be used for works of improvement of types not included in the original authorized survey reports. In these instances it is believed that the Committees on Appropriations and Public Works have appropriately consulted.

The Department's report Missouri River Basin agricultural program contains recommendations for small structures for flood control as well as land-treatment measures and other improvements for a multiple purpose including flood control. This report which has not yet been authorized by the Congress was referred to the Committee on Agriculture and printed as House Document 373, Eighty-first Congress, first session. Supplements to this report are now being prepared and the recommended programs will be presented in reports to the Congress in a manner which will permit the Committees on Agriculture and Public Works to readily identify those portions in their fields of interest.

Much of the national programs of the Soil Conservation Service, and the Agricultural Conservation Program of the Production and Marketing Administration, authorized by the Committees on Agriculture, contribute to the reduction of floods and sedimentation. Examples of Forest Service programs which also contribute to flood and sediment reductions and which are not referred to the Committees on Public Works are:

1. Protection and management of timber, range, wildlife, and recreation resources on national forests under a multiple-use program where watershed values and water resources receive consideration. Rehabilitation through reforestation and revegetation of denuded and poorly stocked forest and range lands.

2. Fighting forest fires on national forests which in addition to protecting timber and other resources keeps to a minimum the acreage on which erosion and run-off will be accelerated by loss of soil-protecting cover.

3. Construction and maintenance of roads and trails aid in better forest-fire control.

4. Cooperation with States and private forest owners including fire control, tree planting, forest-management assistance, and extension work.

5. Acquisition of forested, cut-over or denuded lands to be added to the existing national forest system for the regulation of the flow of navigable streams or for the production of timber.

6. Cooperative range improvements including such measures as water developments and reseeding.

7. Control of forest insects and tree diseases to minimize epidemic outbreaks which not only destroy the timber stand but also increase the fire hazards to watersheds.

The over-all levels of needs for these examples of Forest Service programs is determined by a consideration of many other objectives besides flood control. Watershed management for flood control is only one of the factors. For example, the needs in reforestation for timber production generally exceed substantially the need for this measure in flood control. On the other hand, for example, in forest-fire control the needs for flood control in many watersheds dictate an intensity greater than that required for other purposes. The contribution of these Forest Service programs to flood control varies by programs and by watersheds.

11. What bureaus of the Department of Agriculture carry out the flood control program?

The Forest Service and the Soil Conservation Service have been assigned responsibility by the Secretary for carrying out the flood-control program including preliminary examinations, surveys, and the installation of works of improvement. Responsibility assignments for preliminary examinations and surveys are on a territorial basis by watersheds according to the prevalence of national forests and whether the expected program will be principally in the field of work of the Forest Service or in that of the Soil Conservation Service. Secretary's Memorandum No. 1166, June 27, 1946, reproduced on page 11 of the Handbook and incorporated in the administrative regulations of the Department explains the assignment of responsibilities and presents a map delineating the areas assigned to the two bureaus. A further explanation is given in paragraph 3 of the memorandum of April 5, 1950, Explanation and clarification of policies and procedures on flood-control surveys. Although responsibility for any survey is assigned to either the Forest Service or the Soil Conservation Service, field survey work is carried out by technicians from both bureaus. Soil Conservation Service men are assigned to the Forest Service where it has responsibility for the survey and vice versa. The Production and Marketing Administration, the Bureau of Agricultural Economics, and the Extension Service furnish consultation and advice to the responsible bureau. Other bureaus also participate in general basin investigations because the scope of work is broader than that of flood control. For further details see paragraph 3 of the memorandum of April 5, 1950, Explanation and clarification of policies and procedures on flood-control surveys.

To carry out works of improvement, the Secretary assigns the work to the bureau which normally performs the same or similar types of work. Memorandum 1166, previously mentioned, also refers to carrying out works of improvement and to the assignment of responsibility for this work. Agreement between the Forest Service and the Soil Conservation Service concerning the work to be done by each is reached in advance. At present, direct-aid payments are made by the Production and Marketing Administration under its regular program, for some land-treatment measures included in flood-control programs as an aid in installing improvement measures. Educational aspects are carried out by the Extension Service in cooperation with the States.

12. What reporting procedures are used within the executive branch above the level of the constructing bureau in exercising control over the program?

A. *Preliminary examinations and surveys.*—The Office of the Secretary of Agriculture maintains financial control of preliminary examinations and surveys

by requiring a report of all funds obligated at the end of each fiscal year. The bureaus submit quarterly reports to the Office of the Secretary giving estimated dates of competing surveys, and from time to time the Secretary's office requires special reports on the status, progress, or other aspects of flood-control survey and basin-planning work.

The flood-control survey officer in the Office of the Secretary exercises control over the program of preliminary examinations and surveys. Although no formal reports are required other than those mentioned above, this officer coordinates the work of the bureaus responsible for the surveys, inspects and studies field work, reviews completed reports for the Secretary, and recommends to the Secretary action to be taken in connection with flood-control surveys and preliminary surveys.

B. *Works of improvement.*—The bureaus (Forest Service and Soil Conservation Service) responsible for the installation of watershed-improvement measures report annually to the Secretary information required for the preparation of the reports for the Committee on Appropriations described in answer to question 9. This information on accomplishments and financial obligations serves to inform the Office of the Secretary on the status of the works of improvement for the 11 authorized watersheds.

The flood-control operations officer in the Office of the Secretary maintains constant contact with the constructing or installing bureaus and occasionally visits the watersheds to become familiar with operations progress and problems, to obtain local reactions to the installed land-treatment measures and supplemental structures, and to discuss plans and progress on the ground with agency representatives. Conferences are then held with agency representatives in Washington to follow up on matters about which he may have questions or on which he may have suggestions.

13. What additional steps would the Department suggest being incorporated in the present authorization procedure?

The Department recommends no additional steps in the authorization procedure for flood-control survey programs. However, in the event that more than one congressional legislative committee considers a flood-control report it would be helpful to have a clear understanding of the requirements and desires of each for it is essential to preserve both the land-treatment and watershed-engineering measures in a balanced program.

Another step in the procedure for authorizing general basin programs may be desirable. This step would give congressional approval to a comprehensive basin program to establish a program framework within which individual projects would be submitted by the several Federal agencies for consideration and approval by one or more of the legislative committees.

14. What existing steps might well be eliminated without loss of necessary and proper control?

None.

15. What projects are authorized on which no work has yet been done? When were they authorized? What were the estimated costs at that time? What is the present status? And, if available, what is the present estimated cost?

None. Some work has been done on each of the 11 watersheds authorized by the Flood Control Act of December 22, 1944, as amended. Certain measures, such as fire control, are planned and the work is carried out on a watershed-wide basis with cooperating State Forestry agencies. Much of the work, however, is planned and carried out on a subwatershed basis in cooperation with local soil conservation or other districts and farm and forest owners and operators.

The table on page 419 of the attached statement, Flood control, Department of Agriculture, shows for each of the 11 authorized watersheds the installation period called for in the approved reports, the estimated Federal costs shown in the survey reports and as of June 30, 1949, the cumulative Federal obligations as of June 30, 1951, and the estimated Federal obligations for the current fiscal year. Cumulative obligations for emergencies through June 30, 1951, are also shown, together with an estimate of such obligations for the current fiscal year.

(Whereupon, at 11:30 a. m., the subcommittee adjourned until 10 a. m., Tuesday, April 29, 1952.)

STUDY OF CIVIL WORKS

THURSDAY, MAY 8, 1952

COMMITTEE ON PUBLIC WORKS,
SPECIAL SUBCOMMITTEE TO STUDY CIVIL WORKS,
Washington, D. C.

The special subcommittee met, pursuant to adjournment, at 10:10 a. m., in room 1302, New House Office Building, the Honorable Robert E. Jones, Jr., presiding, and Charles D. Curran, staff director.

Mr. JONES. The committee will come to order.

We are honored this morning in having our good friend and colleague from Texas, the Honorable George Mahon, appear before us. As we all know, Mr. Mahon in appearing before us is doing so with some personal hardship because of his legislative responsibilities. As chairman of the subcommittee of the Committee on Appropriations responsible for national-defense activities, he has one of the heaviest loads facing any of the Members of the House. Notwithstanding this, he is able to take time to concern himself with the water problem facing the constituents of his district. While in some parts of the country the people are faced with tremendous floods, west Texas is facing one of the worst droughts of all time. We are happy to have you here today, Mr. Mahon.

STATEMENT OF HON. GEORGE H. MAHON, MEMBER OF CONGRESS FROM THE NINETEENTH CONGRESSIONAL DISTRICT OF TEXAS

Mr. MAHON. Mr. Chairman, I appreciate your comments and I wish to be brief. I would like to present for the record the attached letter from a distinguished citizen and lawyer from my district, Mr. Arthur P. Duggan, Jr., Littlefield, Tex. There is attached to the letter an enclosure sent me by Mr. Duggan which I would like also included in the record.

As you stated, we in west Texas are faced with a continuing problem of too little water. Our own conservancy groups are working on the problem of developing underground water supplies within the framework of State law. I want to state for the record of your subcommittee that we are strictly opposed to Federal control of underground water resources in our State.

I believe, Mr. Chairman, that the letter and the attached article will be helpful to your committee. Thanks for your kindness.

(The documents refered to are as follows:)

LITTLEFIELD, TEX., *April 24, 1952.*

Hon. GEORGE MAHON,
Member of Congress, Washington, D. C.

DEAR GEORGE: Reference is made to my letter to you dated September 14, 1951, and your answer dated September 21, 1951. It is my understanding that the

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special House Public Works Subcommittee of which Representative Jones of Alabama is chairman has been holding hearings in regard to possible Federal legislation on water matters.

Enclosed is the reprint of an article in Industrial and Engineering Chemistry, volume 44, page 18–A, March 1952. I do not know who wrote the article, but it is the type of information that should be brought to the attention of any one considering legislation on underground water. It would be appreciated if you would bring the article, or the information contained in it, to the attention of the proper indiivdual or committee or subcommittee in the most effective manner possible.

It is highly likely that the subcommittee or committee involved has been acquainted with much information to the effect that ground-water levels are decreasing in various areas of the Southwest and that the water is being mined, and that some of the underground-water reservoirs, including the one located in your district, cross State lines. One indication of this is a recent publication put out by the United States Department of the Interior entitled "The Drought in Southwestern United States as of October 1951." This pamphlet points out various problems and recommends, among other things, that all State and local agencies be urged to initiate immediately the necessary action to establish effective controls of ground-water development and withdrawals.

It would certainly be helpful to those studying the problem to know that in Texas there has already been passed the most modern ground-water legislation. Our legislation makes possible not only controls but also stresses the regenerative feature of recharging the water sands. If recharging is successful, it may be possible that no controls will ever be necessary. In any event, you can point with pride to the fact that your constituents realize their problems concerning ground water and are actively working to solve those problems, and are taking intelligent steps based on the most advanced hydrological advice and techniques in order to solve those problems.

Please advise me, or Mr. Tom McFarland, general manager, High Plains Underground Water Conservation District No. 1, room 1220, Lubbock National Building, Lubbock, Tex., as to how we can most effectively cooperate in taking any and all steps necessary to present our case to the subcommittee or committee studying proposed Federal water legislation. If needed, we have available recognized and expert hydrologists as well as lawyers and water users, all of whom can probably hold their own under severe cross-examination, at least as applied to conditions and laws which affect our area. There is no doubt in my mind but that the High Plains district can cooperate effectively with the State of New Mexico in solving common ground-water problems due to the existence of our reservoir on both sides of the Texas-New Mexico boundary.

Folks down here feel confident that, with you calling the shots in Washington, we can see to it that our most important natural resource is not destroyed in usefulness by overaggressive and ill-advised meddling from Washington.

Warmest personal regards.

Sincerely yours,

ARTHUR P. DUGGAN, Jr.

[From Industrial and Engineering Chemistry, March 1952]

POURING IT BACK

Creation of the High Plains underground-water district No. 1, covering 13 counties in west Texas, is something of a story. Underground injection of surface water to recharge water-bearing sands it not a new idea—167 such operations existed in the United States in 1950. But creation of this district by special referendum election last November marks Texas' first serious venture into artificial recharge, expected to be by a very comfortable margin the largest project of its kind to date, 1 billion gallons per year when a water balance is achieved.

Artificial recharge from floodwaters, reservoirs, or other sources for building up underground reserves depends on the type of soil and the water source. In those areas where the soil is sandy from ground to water table level, a simple spreading over the land will suffice. Where the water-bearing sand is overlaid by a tight soil (as in west Texas), the water may be distributed to the sand by pumping through wells if the water sands are deep or by gravity flow through pits if they are near the surface. Peoria, Ill., has been very successful with the latter method IND. ENG. CHEM., 43, 12 A–13A (June 1951).

While west Texas isn't arid, the rainfall might well be classed as meager (20 inches per year) and, worse, it doesn't usually come in the periods necessary for successful farming. Irrigation has been the answer. In going from 1,300 irrigation wells in 1935 to over 14,000 today, crop values have increased more than $150,000,000 (almost a million-ton-yield increase in an area the size of the State of Maryland). One of the most spectacular results of this irrigation of direct interest to the chemical industry has been the growth of the milo maize crop, harvested now on nearly 800,000 acres and the principal raw material of the Corn Products Refining Co.'s plant at Corpus Christi.

West Texas is dotted with thousands of depressions which fill with water when the rain does fall, and which also serve as collectors for the irrigation water drainage. Since the soil is generally tight, this water does not seep through into the water sands, but stays on the surface until it evaporates, contributing almost nothing to recharge of the sands or to the flow of any river. With the pumping for irrigation increasing heavily during the past few years, lowering of the water table has become sufficiently marked to cause some alarm, and the enabling act by the legislature in 1950 provided for the referendum which created the new water district. This act, restricted entirely to artificial recharge, for which there had existed no legal precedent in Texas, is somewhat unsual. It specifically states that the money collected in taxes by the new district shall be spent also for education and research in solving the phyiscal and chemical problems relating to treatment of water before recharge, and the most efficient types of well drilling and equipping for recharge.

Experimental wells have shown that the project can be a success. Where the water sand is dewatered at its top near an area where water has collected, mere sinking of a well or shaft will be sufficient. In other cases the water may have to be carried a short distance by ditch and actually pumped into the water sands.

Among the several chemical and physical problems that may present themselves in the large-scale undertaking, perhaps the only serious one is that of mineral concentration as mineral fertilizers are being increasingly used in this area, and with essentially recirculation of the water existing when a water balance is achieved, there is some thought that mineral concentrations may build up beyond limits of tolerance. This is a question that only time can answer.

Not only does this project present a favorable outlook for additional agricultural development, but it also offers interesting possibilities for chemical plant location in an area where natural gas and other raw materials are readily available but industrial water has been scarce. Furthermore, the area is one in which diversification of agriculture may supply additional opportunities for chemurgy, for food processing, and for the development of building materials. Already the area is important as a producer of gypsum for wallboard.

To see conservation being started while utilization of a natural resource is expanding is still comparatively rare. This particular project owes its support to the fact that the farmers really understand the importance of the steps to be taken. An interesting commentary on viewpoints is evidenced by the fact that support of the district by urban groups was much less enthusiastic although indirect benefits to them may in the end be greater than to the farmer.

One final comment, at present unrelated to the entire water-conservation problem, but which might have direct bearing on its future: Monsanto's new announced sodium polyacrylate soil conditioner, Krilium, could conceivably play a large part in removing the need for artificial recharge, especially in areas with tight-soil conditions such as those in the High Plains region. If application of the conditioner to these tight soils will produce a porous and granulated, but firm, top soil which will allow ready absorption of the rainfall, the enormous wastage by runoff and evaporation will be reduced extensively and perhaps recharge will not be necessary.

W. H. S.

Mr. JONES. Also this morning we have Congressman Curtis, who has with him several witnesses who wanted to testify on the Salt-Wahoo project in Nebraska.

Mr. Curtis, we are delighted to have you this morning and your fine people from out there. So if you want to make a statement we will be glad to hear you at this time.

STATEMENT OF HON. CARL T. CURTIS, MEMBER OF CONGRESS FROM THE FIRST CONGRESSIONAL DISTRICT OF NEBRASKA

Mr. CURTIS. Just briefly, Mr. Chairman, we do appreciate the chance to be heard here. I think it is quite fortunate that these men could come in because as you are studying the whole idea of conservation and river development and water control and utilization, they have a viewpoint from the agricultural approach that I am very anxious you get to hear about. I am not going to take their time to make their speech.

I do want to tell you a little bit about who they are and what they represent.

Right in and around the community of Lincoln, Nebr., we have the Salt Creek drainage basin. Wahoo Creek runs into it and they both run into the Platte River. We have referred to this area as the Salt Creek-Wahoo area. It has had constant flood problems. The people out there have been very alert to the matter and they have an association that has done an unusul job of research, public education, and leadership in this field. It is headed by two cochairman and they are both here this morning, Mr. Otto Liebers, who is one of the prominent citizens of our State, and a member of the State senate. He is a farmer and dairyman.

Mr. DONDERO. I discovered that when I shook hands with him.

Mr. CURTIS. Mr. McConnell, the other cochairman, is the editor of the Lincoln Journal, the newspaper that has pioneered in this entire field.

Then we have as our third witness Mr. Byron Dunn, a banker of Lincoln, who has been one of our leading individuals in this matter as well as in other civic projects, and one of the leading bankers of the Middle West.

Mr. Liebers will speak first.

Mr. JONES. I wonder if they have as much enthusiasm for this project as you have.

Mr. CURTIS. They have more. In fact, they keep firing me up all the time.

Mr. JONES. I know it does not take much firing to get you worked up on this project.

We are delighted to have you gentlemen here today.

STATEMENT OF OTTO H. LIEBERS, STATE SENATOR AND COCHAIRMAN, SALT-WAHOO WATERSHED ASSOCIATION, LINCOLN, NEBR.

Mr. LIEBERS. I should like to point out the position the Salt-Wahoo Watershed Association has taken in regard to the work of the various Federal agencies in their flood-control programs, and our reasons for our stand.

Flood control was the original objective of the small group of farmers living on the main stem of Salt Creek above Lincoln, Nebr., which every year had acres of productive farm land flooded.

For several years before the formation of the present Salt-Wahoo Watershed Association these men, calling themselves the Upper Salt Creek Farmers Committee, of which I was a member, sought ways of preventing the costly flood damage.

Our first thought was to straighten and deepen the channel of the stream to rush the water downstream. To this end we sought the advice and aid of the Army Corps of Engineers. Investigations by the corps followed, but the Army engineers were unable to recommend a program of flood control for the area above Lincoln. The plan they had prepared for Salt Creek did not prove to be economically feasible for this area. Since flood control laws require that improvements to be undertaken by the Federal Government must create benefits in excess of the costs involved, these improvements could not be recommended.

By this time we had become convinced that levees and channel work on the main streams alone would not solve our problems, and that we would have to look upstream for a solution. We had discovered that soil conservation practices recommended by the Soil Conservation Service and small structures in the small watersheds upstream would not only help solve our problems, but would be of far greater benefit to the whole area.

This group of farmers found a close ally in the Lincoln Journal newspapers, which through its news stories and editorials had been advocating soil conservation applied on a watershed basis as a part of a program of preventing flooding on the main streams.

Then, just 2 years ago today, May 8, 1950, came the flood that cost southeast Nebraska 22 lives and some $53 million, and set the present machinery of watershed organization into motion in the Missouri Basin.

With the sponsorship of the upper Salt Creek farmers committee and the Lincoln Journal newspapers, organizational meetings were held with hundreds of persons representing all levels of government, farmers, landowners, businessmen, bankers, and private citizens from every part of the 1,655 square mile watershed drained by Salt and Wahoo Creeks.

It was the unanimous agreement of the people involved that:

1. Experience and research have demonstrated that on-the-land water conservation and erosion control are essential elements of flood control, and that controlling runoff water and minimizing the damages it inflicts is all one problem—whether on the land, in the small tributaries or on the main stream—and best solved when approached as such on the basis of a watershed as a whole;

2. In a maximum program of flood and erosion control, retention structures and downstream control works and channel improvement must be planned so as to supplement, and to be integrated with, the most widespread upstream application of water and soil conservation practices on the watershed lands of all the tributaries;

3. Federal, State, and local agencies are available to provide for the application of all the best known methods, procedures, and control structures in a maximum flood- and erosion-control program for the lands and streams of Salt-Wahoo Creeks watershed;

4. The job is to bring about such coordination of planning and of effort among all such agencies and between them and the citizens of the area as to bring to the watershed the earliest application by all agencies and citizens of a maximum and integrated program for the watershed.

At the time of the Salt-Wahoo organization, Col. Henry J. Heoffer, district engineer of the Corps of Engineers of the Omaha district,

assured the directors of the association that the Engineers would make further investigations of the watershed to see if a plan could be presented that would be economically justified. He also told the association that it would be consulted before the engineers' plan would be submitted.

On July 20, 1950, the Department of Agriculture Soil Conservation Service was authorized to make a flood- and erosion-control survey of the Salt-Wahoo watershed to be coordinated with the survey of the engineers.

On October 20, 1950, the Corps of Engineers made public its tentative recommendations for the Salt-Wahoo watershed. The program called for a $14,000,000 project which included four reservoirs and channel enlargements, straightening and extensive levees downstream from the cities of Lincoln and Wahoo.

The Salt-Wahoo Association, meeting the same day, disapproved of the engineers' plan in strongest possible terms, calling the proposals "piecemeal and extravagant" and saying—

> * * * under no circumstances will the Salt-Wahoo Association or the people of the area be ready even to consider such proposals as the Army engineers are making until the Department of Agriculture's survey, embracing a combination of on-the-land soil and moisture conservation and small temporary reservoirs in the uppermost tributaries has been completed.

Immediately the Salt-Wahoo Association, through the Nebraska representatives in Congress, urged that the Secretary of Agriculture, Charles Brannan, and General Pick, Chief of the Army Corps of Engineers, order that the investigations in the Salt-Wahoo watershed by the two agencies be conducted jointly from the beginning. At the same time the Secretary of Agriculture ordered that an extension of time be given to the Soil Conservation Service for completion of its survey, which was to have been completed January 1, 1951, so that it could be coordinated with that of the Army engineers.

At this point the two agencies had to begin their investigations over from the beginning. They began a type of coordination which to date has been unknown to the two groups.

The Army engineers have been primarily concerned with channel work and building large dams to control the waters of heavy rains which come once in 50 or 100 years—for the protection of flood plain lands on the main stems of larger rivers. The Department of Agriculture has confined its flood prevention work to controlling runoff of lighter rains which cause minor flooding and great land damage each year by sheet and gully erosion in the upper tributary areas.

Because of this, basic assumptions about damage, runoff, and methodology of the two agencies were different. In order to build a flood-control survey from the ground up the two had to work out agreements on basic data.

On June 11, 1951, the two agencies presented a joint "progress report" on the survey being made, the content of which accompanies this presentation.

You gentlemen have the copy of that in your file.

Mr. JONES. That is now pending before the Secretary?

Mr. LIEBERS. Yes.

At the time of this joint report the Corps of Engineers and Soil Conservation Service indicated that they felt the joint survey was of

a pioneering nature and would probably serve in other areas for similar surveys.

Cooperation of the two agencies in the Salt-Wahoo investigation continued until the final stages of the program to be recommended. At this point disagreement at the top level of the two agencies caused delay in completion of the report. Seeing that the delay would forbid presentation of the joint report to this session of the Congress, the Salt-Wahoo Association requested the Department of Agriculture to complete its recommendations for the watershed to be presented to Congress with the supplemental report to House Document 373, the agricultural development plan for the Missouri River Basin.

To date the Corps of Army Engineers has not submitted an alternative plan for the Salt-Wahoo Basin. The Salt-Wahoo Association has reviewed and is favorably impressed with the recommendations of the Department of Agriculture for this watershed; however, we understand that complete flood protection cannot be achieved for the watershed without the downstream works such as might be recommended by the Corps of Engineers in completion of a joint program.

Conservation of soil and moisture, in the Salt-Wahoo concept, is an integral part of balanced and economical flood control planning. We do not claim that you can eliminate floods altogether through proper land management, including contouring and terracing of the land to hold the soil in place and slow runoff water. But we do say, and know to be a fact, that the largest single element of damage from rains of flood-producing proportions is to the land, through sheet and gully erosion. When floods occur, it is foolish to center all attention on the spectacular 25 cents damage down on the flood plains and ignore the 75 cents loss up above.

Our association feels that if you manage the land properly, you also:

Increase agricultural production, insuring its future;

Raise the water table and take out insurance against drought, enhancing the stability of your farm economy;

Reduce peak flood runoffs—to an extent varying with the lay of the land—and to that extent reduce the problem remaining to be dealt with by on-stream dams, channel straightening and levees;

Reduce siltation in whatever reservoirs are necessary, prolonging their useful life.

Our association puts conservation first, not because it is the only element or the only objective of an over-all program, but because it is thus so closely related to all other parts of a truly economical over-all program. It is a first objective also because it is a job to be done at the "top" of every watershed, where the flood problem really begins.

To the extent that the flood problem is tackled where it begins, in small watersheds such as this, we can know with greater certainty how much of an expenditure is necessary and justifiable on the larger rivers, farther down.

This is what we mean when we say that conservation is a primary element in effective and efficient flood control. To be truly economical, and fully effective, flood control must be truly over-all embracing the problem in its whole and at every possible point—including at its start.

The application of such a concept requires a high degree of coordination among all the many public agencies involved, as well as the

cooperation of all the people who are affected and to whom in the last analysis the public agencies belong.

I thank you.

Mr. DONDERO. Mr. Chairman, will someone before they leave indicate to the committee the meaning of the blue and the red on the map?

STATEMENT OF RAYMOND A. McCONNELL, JR., EDITOR, LINCOLN JOURNAL, AND COCHAIRMAN, SALT-WAHOO WATERSHED ASSOCIATION, LINCOLN, NEBR.

Mr. MCCONNELL. It does not mean too much as far as our particular presentation is concerned. This is Wahoo Creek here and this is Salt Creek here. This is the city of Lincoln, and this is the city of Wahoo, and this is the city of Ashland. These are all tributaries and the various colors refer to the size of the subwatershed that is drained by that particular section of the creek. This map, as I understand it, was prepared for the technical or as part of the technical survey which has yet to be presented to Congress officially.

Mr. SMITH. This map was before us 2 weeks ago.

Mr. MCCONNELL. We had this mainly so that we could show you the relationship of the creeks to the towns.

Mr. CURTIS. Mr. Chairman, we will be pleased to follow whatever procedure the committee desires. If you would like we can have the other two gentlemen present their papers and then have the questioning afterward.

Mr. JONES. I think it would be better because we have an 11 o'clock session of the House and we want to hear everyone who comes up.

Mr. CURTIS. The next witness is Mr. Byron Dunn, who is treasurer of the local association and a banker of Lincoln, Nebr., as well as a civic leader there.

Mr. JONES. We are glad to have you, Mr. Dunn. You may proceed.

STATEMENT OF BYRON DUNN, TREASURER, SALT-WAHOO WATERSHED ASSOCIATION, LINCOLN, NEBR.

Mr. DUNN. Thank you very much. Thank you, Congressman Curtis and gentleman of the committee.

I think each one of us could stand here and probably talk more enthusiastically about this than we can read these papers, but we have reduced the things we have to say so as to conserve your time. We are enthusiastic about it, as some of you know, and of course, as Congressman Curtis knows, we ride herd on this project pretty religiously.

For myself, I am one of the hard-headed, mean bankers. I have been at it for 47 years and we do not give our time and money to a project which we do not thoroughly investigate before we start on it. I have been sold on this several years ago, and that is the way I became associated with it.

Before outlining for you the work the Salt-Wahoo Association has done since it was formed less than 2 years ago, I should like to acquaint you with the men behind the watershed movement.

The association is headed by a board of directors of 28 prominent men from every area of the watershed. Fourteen of these men are

leading farmers representing both the lowlands and upland farms of the area.

We think that is important so that every part of the area is represented.

Of these, Mr. Liebers, a successful dairyman and farmer, is a member of the Nebraska unicameral legislature. Charles Warner, a farmer, is Lieutenant Governor of Nebraska. H. E. Iske, a farmer, also serves as county commissioner. E. E. Placek, besides being a farm operator is also a manufacturer and banker. The other farmers represented are prominent in the various farm organizations of Nebraska.

Six bankers are represented on the board of directors. Of these, George W. Holmes is chairman of the board of the First National Bank of Lincoln. T. B. Strain is chairman of the board of the Continental National Bank of Lincoln. The other bankers represent banks in the smaller cities, such as Ithaca, Wahoo, and Hickman, Nebr., and I am president of the National Bank of Commerce of Lincoln.

Press and radio men represented on the board include Mr. McConnell, editor of the Pulitzer prize-winning Lincoln Journal and chosen by the United States Junior Chamber of Commerce in 1951 as 1 of the 10 outstanding young men in the United States; Stanley A. Matzke, farm editor of the Lincoln Journal and former State senator; M. C. Howe, editor of the Ashland Gazette; and Bill Macdonald, farm service director for radio station KFAB.

The other directors include Clarence Miles, attorney and former mayor of Lincoln; and Jack Fickler, businessman and former mayor of Ashland; Robert Ewart, county judge, who is very active in this work; and Henry Amen, member of the Lincoln Sanitary District Board.

Mr. JONES. Where is Paul White in here? I happened to serve with Paul out in the Pacific. Let us get him in there somewhere.

Mr. MCCONNELL. We will sell him a membership.

Mr. DUNN. I think we should sell him a membership—one of those expensive kinds.

These men, all men of judgment and common sense, have given much thought and study, and many days of their time, to working out and pushing forward the over-all, down-to-earth program of relating soil and moisture conservation with flood and erosion control.

The first stage, and a continuing one, in such a program has been to acquaint the people of the area with the commonness of their problem, which is to say with their community of interest, and with the nature and common sense of the proposed solution.

In the Salt-Wahoo area we have been accomplishing this through an extensive program of educational public meetings, tours, exhibits, and by distribution of educational literature.

Shortly after final organization of the association, mass watershed meetings were held in every part of the area, at which the program was outlined. Each of these meetings was followed by smaller meetings within each subwatershed area to acquaint specific groups with their responsibilities in the development program.

Officers of the association have appeared at public meetings to explain the program on an average of twice a week since formation of the group.

These men have reached every segment of the population within the watershed and have presented the program in nearly a dozen States.

They are in constant demand as speakers, and have told the watershed story to nearly every type of organization. Some of these include:

Kiwanis clubs, Rotary clubs, Lions clubs, chambers of commerce, city councils, the Nebraska Legislative Council, farm groups such as the Farm Bureau, local and State granges, Future Farmers of America, 4–H, Ag Vet groups, the Izaak Walton League of America, women's groups, soil conservation district supervisors, agricultural extension agents, the Nebraska Better Fishing Association, an association of rural ministers, the Missouri Basin Inter-Agency Committee and the Northern Great Plains Council, the State Coordinating Committee on Missouri Basin Development, grade, junior high, and high school students and faculty, the Lincoln Teachers Association—I think that is a wonderful group. They have taken a very active part in this—students and faculty members of the University of Nebraska, the Soil Conservation Society of America, the Nebraska Bankers Association, railroad officials, Boy Scouts of America, other watershed groups in Nebraska and Kansas, and the American Press Institute at Columbia University.

The basic idea behind the watershed approach seemed so sound that immediately after the formation of the Salt-Wahoo association other areas of the State joined together to form watershed associations in their regions. Officers of the Salt-Wahoo group met with each group desiring to organize, to outline organization procedure and point the way for the new groups to formulate their educational programs.

Each of the other watershed associations in Nebraska is organized following the pattern of the Salt-Wahoo pilot, and two representatives of the sponsoring Lincoln Journal are members of the board of directors of these groups. These men are Mr. Ray McConnell and Mr. Stan Matzke.

Since then the movement has spread into Kansas and the Salt-Wahoo association aided in the organization of similar watershed associations in that State.

Further education has been carried out through the printed word. The association, through the Lincoln Journal, has printed thousands of news stories and editorials, and special pamphlets have been printed. Thousands of reprints and pamphlets have been distributed throughout the State and Nation as well as within the watershed. A large number of public schools in Nebraska have written for these informational pieces for use in their teaching programs.

Mr. DAVIS. I wonder, sir, if you would be kind enough to let me as an individual have a little packet of those pamphlets?

Then may I ask this further question, Mr. Curtis? Do you have bylaws governing your organization?

Mr. DUNN. Yes, sir.

Mr. DAVIS. From a personal standpoint this excited my imagination with very deep interest and I think this is what we are going to have to do more and more over the country. We rely on the Federal Government to do everything for us. I think through this wide educational program you are outlining here backed by substantial businessmen, bankers, labor, and railroad people, editors, and schools, and so on, as well as college professors, I think if we could get right

down to it into the grass roots and encourage the proper land-management practices, then we would show some enterprise of our own and we would not have to go to agencies for a lot of counsel and work that we could very well do for ourselves. This is of very great interest to me, therefore, and I would appreciate it if you would give me a copy of your bylaws and just a package of some of these pamphlets and some of this information and literature that you have been sending out, because I want to use it in my own district.

Mr. DUNN. We will furnish any amount you want to any of the members. We would be glad to do it.

Mr. DAVIS. Just a sample.

Mr. MCCONNELL. We have samples in that folder which each of you have, but we will mail you copies of our bylaws and some more stuff.

Mr. DUNN. We have stacks of it that we have been using on these.

While you are on that subject, some of these communities were so against soil conservation that they even warned us not to go out and talk to some of those farmers, but you will find out we talked to them and they did not ride us out on a rail. In some of those toughest communities they joined pretty near 99 99/100 percent in the soil conservation programs right along.

Mr. DAVIS. And those practices are increasing the productivity of the land and adding to the income of the acreage involved?

Mr. DUNN. It is an investment. You are so right.

To provide the basic stimulus for getting conservation measures put into practice, a series of auto, bus, and air tours has been conducted by the association. Farmers and county agents from every part of the watershed have been taken out in busses chartered by the association to visit model small-scale watersheds which are fully developed, to enable these people to see for themselves what conservation on a watershed basis means.

To show the effect these tours had on farmers I can cite an example of one of the bus tours which took 45 farmers from an undeveloped area to view a developed area. This is one group. Those farmers were so against any soil conservation work that we were told we should not go over there. Of course, that was a challenge to us. We have been thrown out of bigger places than that. Within a week 44 had signed applications with their soil conservation district. That is in a community that has never done any soil conservation and is now coming along 100 percent.

Our educational efforts along this line have had such success that the problem now is one of obtaining enough technicians to catch up with the snowballing applications.

Another phase of our program of tours included a series of ground and air tours for public school teachers in Lincoln. They asked for that. The air tours gave teachers a first-hand knowledge of watershed development. They in turn conducted ground tours for their students. Watershed tours were also given to University of Nebraska students; and air tours have been held to give members of the Nebraska Legislature, the Governor, and officials of the University of Nebraska, a bird's-eye view of the watershed problems and their solution.

In order to further the program of watershed development in Nebraska the Salt-Wahoo Association in 1951 sponsored enabling legis-

lation to permit people within a watershed to organize governmental subdivisions of watershed districts adapted to the special purpose in a watershed-wide program. The bill was patterned after the Ohio conservancy law to permit the people of a watershed district to enter into contracts with the Federal agencies for the construction of such projects as are approved, and be legally and financially competent to acquire the necessary sites and rights-of-way and guarantee their maintenance.

In this connection the association carried on an extensive educational campaign to familiarize Nebraska citizens of the content of the bill. Kansas watershed groups have followed the lead of the Salt-Wahoo group in framing legislation for their State.

Realizing the value of demonstration, the association has arranged with the State soil conservation district supervisors, the Soil Conservation Service and the Production and Marketing Administration and the farmers involved, to develop one or two model subwatersheds.

Another method the Salt-Wahoo Association has used to get the story out to the public is that of exhibits. Special exhibits have been presented at the Nebraska State Fair, at county fairs and at farm and home week demonstrations at the University of Nebraska.

In order to further the dissemination of watershed information, the Lincoln Journal and the Salt-Wahoo Association sponsored a meeting of some 300 daily and weekly newspaper editors and publishers from Kansas and Nebraska. Out of this meeting came an association of newspaper editors and publishers called the Kansas-Nebraska Watershed Council, designed to distribute watershed information to all newspapers and watershed organizations in the two States. This council publishes a newsletter every 2 weeks which is sent to all these newspapers and groups.

The Salt-Wahoo Association has also carried out its educational program through the weekly newspapers and through interviews and reports on local radio stations. The Boy Scouts of America are preparing signs to be set out on the highways designating the watershed boundary to familiarize people with their area.

The association is also sponsoring a 20-minute color movie about watershed development in this area designed for educational use throughout the country. This movie, being filmed by the University of Nebraska, will be followed with shorter color movies and film strips on specific phases of the development.

The longer, general movie is being financed by a grant of the Cooper Foundation. The shorter, specific movies, and film strips are being financed by the Sears-Roebuck Foundation. The general program of the association has been financed totally by contributions of individuals, banks, business firms. The Lincoln Chamber of Commerce has now agreed to underwrite the basic Salt-Wahoo Association program for a 3-year period to enable the group to double the intensity of its educational program.

I thank you gentlemen very much.

Mr. JONES. Thank you, Mr. Dunn.

Mr. CURTIS. Mr. Chairman, the next witness is Mr. Raymond A. McConnell, Jr., editor of the Lincoln (Nebr.) Journal, and one of the cochairmen of this association. Mr. McConnell.

STATEMENT OF RAYMOND A. McCONNELL, JR., EDITOR, LINCOLN JOURNAL, AND COCHAIRMAN, SALT-WAHOO WATERSHED ASSOCIATION, LINCOLN, NEBR.

Mr. McCONNELL. I want to thank you gentlemen for giving us the opportunity to be here today.

Mr. DAVIS. He is quite a man—a Pulitzer prize winner and one of the 10 outstanding young men.

Mr. JONES. He is a young man who still has hair.

Mr. McCONNELL. Well, Mr. Liebers here is quite a man in the farming field. I wanted to call your attention to the fact that he is a national director of the American Guernsey Cattle Club and on its executive committee, and a national director of Golden Guernsey, Inc. He is known throughout the country as an authority in his field.

Mr. Liebers and Mr. Dunn have given you a general background to the activities of the Salt-Wahoo Association and our stand with regard to methods of development. I should like to point out the great need in the Missouri Basin as a whole for a model, or an example of what needs to be done and the methods of accomplishing this.

We are particularly concerned in our area, and throughout Nebraska, I would say, lest the peculiar circumstances of the recent and very damaging and spectacular Missouri Basin flood should tend to freeze into a permanent status what we consider to be an unbalanced program.

We have come to realize and recognize the value of demonstration in the job of bringing about a balanced land and river development program as was pointed out by Mr. Dunn. What we do with our plans in the Salt-Wahoo watershed, a tiny portion of the vast Missouri Basin, can have, we feel, a significant effect on the larger Missouri Basin program as a whole.

Our problems in the Salt-Wahoo watershed are the same as the problems of the entire Missouri Basin—in that neither can be dealt with intelligently except as the streams and the land they drain are considered together and in their over-all relationship. The Salt-Wahoo area is a watershed that in May 1950, suffered the worst floods in its history, and again in 1951 suffered the worst floods in its history. The same was true throughout eastern Nebraska and southeast Nebraska. Almost no community was unaffected. Twenty-two lives were lost the first year, three the second, and both years the toll in city and village and farm property, in tax-built roads and bridges and above all except life itself, in crop-producing land, was more than any community and any area, and particularly any area so utterly dependent on agriculture, can afford to have recur. What happened so tragically and spectacularly last year in Kansas happened less spectacularly but hardly less damaging in the most fertile and populous parts of Nebraska—and happened 2 years in a row.

You are familiar with the pattern of damages in such disasters. You may be less familiar with the fact that on a less spectacular scale but with a cumulative effect that is equally devastating, this toll is being taken month in and month out, year in and year out—by localized rains and floods that don't even make a headline.

Mr. DAVIS. Some years back did you not have some rather disastrous dust storms out through there?

Mr. MCCONNELL. Yes, sir; and I want to come to that point.

Mr. DAVIS. Come to that because it bears on soil and moisture.

Mr. MCCONNELL. It bears on this very directly, sir.

In a year when no floods were reported as such, the Salt-Wahoo area suffered flood damage of $25,000 in grading and regrading; $25,000 in graveling and regraveling; $7,000 in surface maintenance, and $135,000 in repair of culverts and bridges, or a total of $192,000.

I picked that year at random.

Repair of sediment damage to county roads cost Lancaster County alone $65,000, the same year. That is tax money.

The shaping of a genuinely complete land and water use and development program for the Missouri Basin is of vital importance to all of Nebraska—the only State wholly within the Missouri Basin—and especially to the solution of our pressing twin problems of floods and erosion in central and eastern Nebraska.

And we are working in Nebraska and the Salt-Wahoo watershed to apply principles of land and water use and control upon which we know it is possible not only for the experts to agree but for the many seemingly divergent lay factions and interests—whose differences have retarded the protection of our lives, property, and natural resources in too many areas, to find common ground.

Whenever there is a hearing on flood control there are always many people who testify who have already chosen sides of one viewpoint or another viewpoint and taken that stand very dogmatically.

You have probably heard many who have chosen sides. From the over-all standpoint there is only one over-all side that encompasses all points.

For a period of years we had been critical of the Pick-Sloan projects in that they represented an effort—and a costly effort—to control river waters as if rivers existed apart from the lands that they drained. We had been pointing out for some time in our newspaper that a proper river development program—one which would include no more large and costly dams than were necessary and in which what dams there were would not silt up prematurely—had to give some attention not only to the rivers but to erosion control and proper management of the lands.

We have been pointing out also—and I think this gets at your point—we have been pointing out also that our problem in the Great Plains is not always too much water but very often a problem of too little water; and, that the most efficient use, therefore, of the flood-control dollar will be that which also provides a measure of drought insurance for the dry cycle that is sure to come.

All of the agencies engaged in the present Missouri Basin program, including the Army engineers who once were openly critical of this viewpoint, have, I think, come to recognize this to a degree, and accept it to a degree, and through the Missouri Basin Inter-Agency Committee, their coordinating body, they have endorsed the principles of the proposed so-called Young plan—the Department of Agriculture's proposed program to supplement and protect the Pick-Sloan river projects through establishment of proper land management practices on the lands of the watershed, and through erosion

and flood prevention work on the smaller tributaries and in their farthest upper reaches.

But while experts recognize the necessity of this program, it can't be begun until and unless Congress authorizes it; and Congress won't authorize it until and unless the people insist upon it, to protect both their resources and the investment they are already making in the river projects.

People generally aren't going to insist on something they don't understand, and the 10-State Pick-Sloan program, to say nothing of the proposed Young plan for the Missouri Basin, are simply too large a scale for people to see and grasp easily.

I feel sure that if we could demonstrate in one small compact area, such as the Salt-Wahoo watershed around Lincoln, Ashland, and Wahoo, the principles which we (and most experts) consider vital in any truly effective and economical soil and water control program, people not only in this small area but elsewhere could see and grasp those principles more readily, and understand their necessity. Once enough people fully understood them, they would insist upon their more general application in the larger Missouri Basin watershed, because they make such solid common sense. In Nebraska and Kansas we have seen the common sense of this coordinated, watershed-by-watershed approach, take hold.

In the Salt-Wahoo watershed, and in four other watersheds organized after the pattern of ours and with our help—covering a total of 30 of the State's 93 counties—we are working through organized watershed associations of local citizens to achieve all feasible protection against flood losses. Since extravagance in conservation—whether of property or of resources—is a contradiction in terms, we are working for maximum protection at minimum expense. And in this effort we have discovered that the best of farmer-thinking—and the farmers have been doing a lot of thinking—and the best thinking of conservationists and civil engineers alike, are pretty much of one mind on the basic principles by which such protection can be achieved.

In our area we are starting to work from the ground up. Our work starts with the farmers through their locally elected soil conservation districts. I should like to submit a letter from Everett Barr, of Liberty, Nebr., former president of the Nebraska Association of Soil Conservation Districts and present area vice president of the National Association of Soil Conservation Districts, which explains our close working relationships with these districts.

The release is a very vital one, and on our board of directors this particular area includes parts of the six soil conservation districts. Some or all of the soil conservation district supervisors of each of those six soil conservation districts are members of our association's board of directors. Nebraska, I believe, is the only State of the Union in which every county in the State is organized into soil conservation districts. The problem, however, arises from the fact that soil conservation districts are organized along county lines and not along watershed lines. Counties are organized with disregard to the watershed problem and all of our existing subdivisions are organized without regard to the national drainage area.

CIVIL WORKS SUBCOMMITTEE, PUBLIC WORKS COMMITTEE,
House of Representatives, Washington, D. C.

GENTLEMEN: For several years now, many of the farmers and landowners of the State of Nebraska have been promoting the cause of soil conservation through local units of government called soil conservation districts. These units of government are managed by men called supervisors who are elected by the landowners of their own district and these supervisors serve in this capacity without pay.

After a district is established by petition and a vote of the landowners, the Soil Conservation Service of the United States Department of Agriculture helps the district by supplying to this State unit of government men who are trained and classified as technicians of the soil. These men help in bringing about what we may call a proper land use program on the farm or ranch of any cooperator who may desire this service.

Year after year more and more cooperators are added to the list of those who want and request such service for getting proper controls on their land.

As time goes along and various types of practices and controls are put into use on a farm or ranch, one is impressed with the great benefits which are brought about in this endeavor to hold the raindrops where they fall.

However, from time to time, heavy rains occur which develop into floods which, in turn, cause tremendous damages to uplands and flooded land, the urban areas so affected, and even human life itself, as well as many other types of loss.

To many of us, it seems that one of the worthwhile efforts in the prevention of such floods is complete treatment of watersheds. Complete treatment to me means the land treatment measures, such as adjustments in land use in accordance with kinds of lands, the use of crop rotations, terracing, and structural measures in small streams which would consist mostly of the detention reservoirs, channel stabilizing works, and gully control.

This complete program will yield benefits to us landowners and operators in the form of increased production and sustained soil fertility. In addition, there will be benefits to the people in the watersheds and for some distance downstream, because in small watersheds the floods I have mentioned will be minimized and the damages usually occurring therefrom practically eliminated.

Although soil conservation districts usually are not organized on watershed boundaries, the supervisors and others in districts have been active in bringing about the organization of watershed associations because the relationship of the work of soil conservation districts to complete watershed programs is practically inseparable. In many cases, district officers are also officers of watershed associations.

I heartily endorse the program devised for conservation and flood control in the Salt-Wahoo Creek watershed in Nebraska, as outlined. This program puts together the land treatment and structural measures in a way that I think reflects the intent of Congress in writing into law the Flood Control Act of 1936. Certainly the program represents the highest objectives of soil conservation districts and watershed associations.

Very truly yours,

EVERETT M. BARR,
Area Vice President, National Association of Soil Conservation Districts,
Past President, Nebraska Association of Soil Conservation Districts.

Through these districts small subwatersheds are developed. This is the logical and necessary extension of conservation on the basis of the individual farm. Some include only a few acres. But the effect of this work, no matter how small the scale, is felt when the farmer across the road from a developed farm sees what has been done and realizes its value.

The same applies to larger watersheds like our Salt-Wahoo area, which comprises many, many small subwatersheds. After our formation as an association, other areas, realizing the value of the over-all program, asked us to help them form similar associations. And now the idea has spread through much of Nebraska and Kansas.

You add up, one by one, all the small valleys where the people are beginning not only to understand the vital relationship between soil

and moisture conservation and flood control, but to do something about it for themselves insofar as they can, and you will one day have those same sound principles firmly rooted in the minds and actions of the people of the whole vast 10-State Missouri Basin, covering one-sixth of the land area of the United States.

One way to establish sound public policy is from the top down. The better way, I think, and the only way that sticks in a democracy, is from the bottom up.

Since we can define a natural watershed as large or as small as you choose to regard it—that is, why did we pick this as a watershed instead of chopping this up into 43 watersheds? There are some 43 tributaries here that are big enough to have names on the map. This is a part of the Platte watershed, and the Platte is a part of the Missouri watershed so you can define a natural watershed here as large or as small as you choose—we chose as our determining principle that the watershed on which planning is done on a coordinate, over-all basis should be (1) however large as is necessary for a technically sound job of planning and engineering, in conformity with the objective you seek; and (2) at the same time small enough to allow a maximum of local control and participation in setting the pace of the work and allocating fairly the cost of upkeep.

To illustrate that, we could not call this the Wahoo Creek watershed and work for a program there and then call this the Salt Creek watershed and work for a program here because one of the communities which is stricken by floods year after year is the community of Ashland. Lincoln has been draining its water through drainage districts down into Ashland, and Wahoo has been doing likewise.

If we are to be neighbors to Wahoo and not have delegations from there come up and raise hell in our city hall every year, we had to have flood control for us planned in relation to flood control for Wahoo up here, because the timing of the flows on these two rivers determines the flood problem down here.

Similarly there are six major subtributaries that converge into a kind of a saucer at Lincoln. We could not say this is the Antelope watershed and this is the Oak Creek watershed and this is the Middle Creek watershed and treat each of these separately, because the confluence of those waters and the timing of the flow of those six rivers into this basin determines our floods here.

So I say the problem is to pick the size of the watershed large enough so that you can get it on a sound basis with the problem you are trying to solve, and yet small enough so that the people can work together.

The application of these principles, whether in the Salt-Wahoo watershed or in the Missouri River watershed, entails beginning at the beginning, where the rain first hits the ground. But to begin at the beginning does not mean to stop there. And, if through lack of foresight or understanding of the problem you happen already to have begun somewhere other than at the beginning, then you must go back and catch up with yourself as fast as you can.

Planning for our watershed as a whole, coordination between planning agencies must begin at the beginning. It is not enough for example to draw up two or more separate and unrelated plans, compiled on the basis of conflicting or of possibly contradictory basic

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assumption, and then coordinate them by sticking a hyphen between them. That is what we were trying to avoid in this area. We did not want to confront the people of the area with two separate and unrelated plans which would be presented as alternatives and then compromise into something that might be at least in some parts of it and in some of its assumptions not altogether sound from an engineering standpoint.

It also means an intensification of on-the-land conservation practices. This in turn requires not only stepped up educational efforts on the part of such agencies as the Extension Service, but stepping up technical service so that when farmers have the will to contour and terrace their land they will also have a way. It does not require expenditure of public money for nonpermanent improvement.

It means also the planning and construction of many small structures—gully checking installations, small retention dams, drop tube inlets for the permanent solution of the bridge replacement problem, and so on.

It means the planning and construction of whatever larger dams and reservoirs are necessary, taking into account what can be accomplished in these other ways.

On this basis, I might interject, we expect no great trouble over the usually controversial question of dams. Your controversy over dams tends to evaporate if your local people have reason to believe from the start that no dams will be planned any bigger than is necessary, taking conservation into account, and that whatever dams are planned will have the longest possible life and take the least possible fertile land out of production.

If people can be assured of that, the ruckus that occurs so often does not generally materialize. Farmers are reasonable—they only ask reasonableness on the part of Government agencies.

Mr. JONES. You had better not let those people from the Republican and Kaw River get up in your territory.

Mr. MCCONNELL. Sir, I have spoken in the town of Randolph which is at the site of the Tuttle Creek Dam.

Mr. JONES. I will assure you of this. When you get the volume of water flowing down there at the rate of 525,000 cubic feet per second, which is the size of the Mississippi River at Memphis, you are not going to stop it by putting out contour farming. You are going to have to have some reservoir to take that volume of water. We cannot kid ourselves that you can have flood control and not have a place to put the water.

Mr. MCCONNELL. We do not quarrel with that.

Mr. JONES. Unless you want to put your people on the hillsides and have everybody put their buckets out and catch it, and then you can turn it loose when you want it.

Mr. MCCONNELL. We do not quarrel with that. We have urged people up and down the Blue. We have urged the proper thing to do is get the engineering done for the Blue River as a whole. It has not to my knowledge been done on that basis yet. If the Blue problem were attacked in its entirety it would be a build-up for soil conservation practices. It would be a place for that and a place for small retention dams and obviously a place for some larger dams. Whether you call that Tuttle Creek or not, I do not know.

Mr. JONES. It is certainly going to take a lot of effort on everybody's part.

Mr. MCCONNELL. That is the point we have been trying to make, and we have been hammering at that in this news letter that has been submitted.

It means the planning and execution of whatever downstream improvement is necessary to handle the water that cannot be held back where it is more useful. To us, finally, this means the appropriation of Federal funds for construction of the larger structures, at least. Certainly in any of these watersheds where the floods originate there is a local interest. But certainly also there is a larger regional and national interest warranting Federal intervention. In our area we want to do what we can to protect our own property. But everything we succeed in doing also helps protect Kansas City, for example.

The same is true on the Nemaha and Big and Little Blues, or any other Missouri tributary. There is an interest beyond any given watershed not only in the flood protection which action within that watershed can offer to property outside, but in the over-all conservation of our food-producing capacity as a Nation.

At the local level the kind of job we contemplate in Nebraska requires creation of a new type of State subdivision—and a Nebraska legislative council subcommittee is working on this problem now. We are asking, and expect to receive, authority to create watershed districts, with powers to participate in the planning of coordinated flood and erosion control and to assume, and allocate among beneficiaries, the fair local share of the initial cost and all the burden of maintenance. Through such a device, we hope to retain in each given locality a certain say on the part of the local people as to how far and how fast and in what direction work should proceed.

In regard to the feeling of the Nebraska legislative council subcommittee I should like to read this letter from State Senator Otto Kotouc, chairman of the committee on watershed legislation:

CIVIL WORKS SUBCOMMITTEE,
PUBLIC WORKS COMMITTEE,
House of Representatives, Washington, D. C.

GENTLEMEN: It is understood that Mr. Raymond A. McConnell, Jr., State Senator Otto H. Liebers, and Mr. Byron Dunn, officers of the Salt-Wahoo Watershed Association of Nebraska, have the honor to appear before a subcommittee of your committee to present information concerning their watershed development program and its relation to the development of the Missouri River Basin program.

I am chairman of a special committee of the Nebraska Legislature conducting a study and preparing a bill to be offered to the next session of the Nebraska Legislature to provide enabling legislation for the creation of watershed districts as governmental entities with authority to carry out a combined program of soil conservation, erosion prevention, and flood control. Our committee has found the Salt-Wahoo Association to have made a very sound analysis of the objectives to be accomplished by watershed districts, and the benefits derived therefrom. They have made valuable contributions of needed information to the Nebraska Legislature. We commend these gentlemen to you as highly competent to explain the need and the benefit derived from a small watershed development program as part of the Missouri River Basin over-all program.

This subject is of vital concern to the people of the United States and the cooperation of your committee is appreciated.

Respectfully yours,

OTTO KOTOUC,
Chairman, Committee on Watershed Legislation.

This is the kind of job we are working on in the Salt-Wahoo watershed. It is a job we feel needs to be done on small watersheds throughout the larger Missouri watershed.

One of our actions, referred to by Mr. Dunn, was at a meeting last August in Lincoln, attended on invitation of my newspaper by some 300 Nebraska and Kansas weekly and daily newspaper editors and publishers and watershed association representatives. At this meeting we passed a resolution urging that work of the sort envisaged in House Document 373 proceed without delay in small watersheds wherever the local people were ready.

The people of this area are unwilling to wait for more floods while the Nation's political leadership is awakened to the problem. And we see no reason to wait on the other eight States' awareness of it.

We would have preferred, I think—and I speak only for myself—to have seen the whole job done right in the whole Missouri Basin. But as a matter of practical fact we cannot see how it can be done—on the principles I have outlined—except watershed by watershed, at whatever pace the farmers themselves can come to understand it and participate in it voluntarily.

So we want no delay—waiting for a sound program for the basin as a whole. The basin is made up of smaller watersheds, and its program will be sound as these are sound and add up, one by one.

At the same meeting in August to which I referred, there was laid the basis for organization of what is now the Kansas-Nebraska Watershed Council. Serving with me on its board of directors are the following daily and weekly newspaper editors and publishers of the two States:

From Nebraska:

Fred Seaton, publisher, Hastings Daily Tribune, and president, Alliance Daily Times-Herald.
Arch W. Jarrell, editor, Grand Island Independent.
Ormond Hill, publisher, Kearney Daily Hub.
Robert S. Marvin, managing editor, Beatrice Daily Sun.
B. B. Rothenberger, editor, Beatrice Daily Times.
J. Hyde Sweet, publisher, Nebraska City Daily News Press.
Emil Reutzel, Jr., publisher, Neligh Weekly News.
Tyler Edgecomb, publisher, the Nebraska Signal, Geneva.
Marshall C. Howe, publisher, the Ashland Gazette.

From Kansas:

H. S. Blake, vice president and general manager, Capper Publications, Inc., Topeka, Kans.
James L. Robinson, Kansas editor, Topeka Daily Capital
Ken R. Chappell, business manager, Manhattan Daily Mercury-Chronicle
Bill Mayer, Lawrence Daily Journal World
O. S. Stauffer, publisher, Topeka State Journal and president, Stauffer Publications
Ewing Herbert, Jr., editor Hiawatha Daily World
Marcellus M. Murdock, publisher, Wichita Daily Eagle
Dwight Payton, publisher, Overbrook Weekly Citizen
Byron Guise, publisher, Marysville Weekly Advocate
W. E. Turner, publisher, Waterville Weekly Telegraph

I am not speaking for this council today, and never will, because it is not an organization for which any one can presume to speak. It was not set up to propagandize any particular point of view. Its sole present function—to which these men and institutions are lending their personal and financial support—is in circulating reliable information on the problems entailed in flood control and on the efforts of people in the two States to solve them. It is sponsored by many newspapers whose many separate viewpoints I didn't even bother to ascertain—for the purpose of bringing the people of the two States and the people within each State closer together in tackling our mutual problems.

The Salt-Wahoo Watershed Association is not anti-Army engineers. It is not anti anything—except piecemeal and incomplete planning and execution, or either of these that overlooks or brushes aside local problems and local needs.

House Document 373, some have said, has many superfluous features besides watershed, flood, and erosion control.

I doubt this. That is, I doubt if it is superfluous in any respect except that it tries to take in too much geographic territory at once. Certainly if our planning in the small watersheds that comprise the Missouri Basin is to be complete, it must be based on adequately intensified research and education, a many-sided job, and those things we want farmers to do voluntarily must be adequately financed.

It is said, for example, that House Document 373 contemplates too much research. I am not fearful that we will err on the side of knowing or learning too much before or while we spend public money.

I am fearful only that we will have inadequate technical knowledge. I am fearful only that we will know too little, too late.

Nor am I fearful that Congress will err on the side of doing too much about our vitally important problems here in the Missouri Basin. Rather I am fearful that it will be too slow in realizing how vital this 10-State area is to the durability of the Republic, and that water and land cannot be managed, conserved, planned or developed, except as they are considered and conserved together.

In the Salt-Wahoo watershed we have the size, the physical location, the experience and the facilities to carry out this program to serve as an example for other similar watersheds in developing the land and water resources of the entire Missouri Basin, and in a way that could save the Federal Government hundreds of millions of dollars. In our small area alone, tentative estimates of the Department of Agriculture show that increased production and reduction in flood damages in the Salt-Wahoo area would amount to benefits of some $8 million annually.

In our area we have the facilities at hand to get the job done in the least possible time. Lincoln's metropolitan-class newspapers—the Lincoln Journal and the Lincoln Star—in their merged Sunday capacity as the Lincoln Sunday Journal and Star—are behind this to the full. The weekly newspapers of the area and a farm magazine, the Nebraska Farmer, are behind it. Radio stations are behind it, the banks of the city and areas are behind it, the soil conservation districts and the county and city governments of six counties and three cities. The University of Nebraska is behind it. I quote here a letter from Chancelor Gustavson:

CIVIL WORKS SUBCOMMITTEE, PUBLIC WORKS COMMITTEE,
House of Representatives, Washington, D. C.

GENTLEMEN: The University of Nebraska feels the Salt-Wahoo Watershed Association approach to soil and water conservation and flood prevention is a must in the development of the economy and resources of the Missouri Basin and the Nation.

The university is working closely with an supporting the work of the Salt-Wahoo Association through our college of agriculture and through the bureau of audio visual education in making movies and film strips on the subject.

We are convinced that the need of expediting the program advocated by the Salt-Wahoo Association is most urgent and ask that it be given the fullest consideration by your committee for the benefit of our Nation.

Very truly yours,

R. G. GUSTAVSON,
Chancelor.

Recently I have been discussing with Chancellor Gustavson ways in which the various departments of the university and various university activities could be tied in closely into the Salt-Wahoo development. These should include research, extension and education, and perhaps audio-visual materials, and so forth. It will take everybody to do this for the proper kind of a job—a construction job, an education job, a coordination job and a cooperation job.

We would like you to remember this: That the proper job from any standpoint, whether economy or natural resources, protection of property or protection of life, economy of public funds or protection of the Nation's food-producing capacity, which is to say its capacity to face the long ordeal ahead, is one which regards land and water management and flood and drought control as two inseparable sides of the same problem.

Thank you very much.

Mr. JONES. We were delighted to have you gentlemen here. I am sorry we could not continue to the point of asking questions but as you know the House is in session now. It has been a most interesting presentation and a unique presentation.

We thank you very much and we are very sorry that we cannot remain. If you have any other witness you would like to present who would like to submit a statement, Mr. Curtis, we would be glad to have the statement.

Mr. CURTIS. Thank you, Mr. Chairman. I merely suggest this: I understand the week before last you heard the Department of Agriculture somewhat in detail and from the technical standpoint on this very area.

Mr. JONES. Yes.

Mr. CURTIS. If it would be possible in your printed report to have this presentation follow the Department of Agriculture's presentation I think it would be helpful to everyone concerned.

Mr. JONES. Fine. The reporter will make a note of that and without objection the hearings or proceedings of this morning will appear immediately after the Department of Agriculture with a note explaining the date on which these witnesses attended, so that it will be clear in the record that it was not a continuous hearing but will make some semblance of continuity in discussing the same problem.

I am sorry that we are going to have to leave but if we do not go over to the floor we are going to have it appear in the papers that we are not attending to our business, and people will want to know where we are.

(Whereupon, at 11:20 a. m., the subcommittee adjourned until 10 a. m. the following day, Friday, May 9, 1952.)

STUDY OF CIVIL WORKS

FRIDAY, MAY 9, 1952

COMMITTEE ON PUBLIC WORKS,
SPECIAL SUBCOMMITTEE TO STUDY CIVIL WORKS,
Washington, D. C.

The special subcommittee met, pursuant to adjournment, at 10 a. m., in room 1302, New House Office Building, Hon. Robert E. Jones, Jr., presiding. Charles D. Curran, staff director.

Mr. JONES. The committee will come to order.

Congressman Cole of Kansas is our first witness. We are delighted to have you this morning, Congressman. It is my understanding that you have a committee meeting, so if you would like to proceed we will hear you at this time.

STATEMENT OF HON. ALBERT M. COLE, MEMBER OF CONGRESS FROM THE FIRST CONGRESSIONAL DISTRICT OF KANSAS

Mr. COLE. Thank you very much, Mr. Chairman. I am deeply grateful to you and the members of the committee this morning for hearing me and the people from Kansas in connection with the matters which you are now considering.

As many of the members of this committee are aware, I represent the Congressional District in which is located the Tuttle Creek Dam site and the cities of Manhattan, St. Mary's, Perry, and Topeka, Kansas.

This committee visited this area and saw the tragic damage to the farms, homes, and businesses in the Kaw River Valley during the 1951 flood.

Prior to this flood, the people of the valley had different opinions concerning various proposals and methods for flood control. The great catastrophe of 1951 did not bring unity of opinion among our people. As I have previously stated, I am not an expert on flood control, but believe I am an expert on flood-control disagreement. I mention this not to introduce an argument for or against a particular flood-control measure, because I understand your committee has jurisdiction to consider the problem of policy and procedure, rather than to determine the efficacy of one plan as against another. The controversy raging in my district is an important factor, however, to be considered by the committee in recommending possible revisions of present policies and procedures in the authorizations of future flood-control projects.

In order to be effective, legislation must have the approval of the majority of the people. This is true even with such projects as flood-control reservoirs.

I am supporting the construction of Tuttle Creek Dam and Reservoir, but the legislative "career" of this project has made it most difficult for me, as a representative of the area, to arrive at a proper decision.

In other words, the policies and procedures heretofore followed by Congress in the authorization of flood-control projects have played an important part in causing disagreement among the people, Government agencies, and Members of Congress.

Let me use the history of Tuttle Creek as an example. It was authorized in 1938. Not one person from Kansas appeared for or against the project. The committee spent perhaps five minutes in listening to testimony concerning the need and scope of the project.

An example of the lax presentation, the representative of the Engineers was asked at the authorization hearings whether Tuttle Creek Reservoir would require the moving or abandonment of any towns or villages. He answered that it would not. As a matter of fact, five towns would be destroyed or removed as a result of the construction of the project.

The dam was first listed as one which would furnish flood control, water conservation, navigation benefits, power, and recreation. Since the original authorization, all of these purposes, except flood control, have been eliminated.

Tuttle Creek has been referred to as the key project in the lower Missouri River Basin, but no funds were requested for planning until 1944. No funds were ever requested for construction until 1951. It became an old project before it was even considered for appropriations.

Since 1938 the estimated cost of the project has risen from $28,000,000 to $79,000,000. Comparison of earlier plans with those of the present shows that the height of the dam has been lowered five feet, yet at the same time the estimated capacity in acre-feet has increased more than 50 percent.

Competent and sincere people believe that soil conservation and watershed control are either substitutes or modifications of the Tuttle Creek Reservoir. Other equally competent and sincere people believe that both methods, the large reservoir and watershed control should be constructed in a comprehensive program. Still other competent and sincere people believe that the benefits derived from the reservoir are not sufficient to justify the cost in money and the loss of production of food.

The present policies and procedures of Congress, either in authorizations or appropriations do not permit either hearing or determination of these conflicting views. It is small wonder, therefore, that the people of Kansas and elsewhere are confused and divided in their attitude toward flood control.

There are other factors adding to the confusion. In the Blue River watershed, the Tuttle Creek area, the Corps of Engineers investigated the possibilities of a reservoir, but no consideration was given at that time to stopping flood damage upstream because, (1) the Engineers do not have jurisdiction to reach above the constantly flowing streams; and (2) work that is essentially "on the farm" is under the jurisdiction of another department and another congressional committee.

More recently, the Department of Agriculture has developed its plan for watershed treatment of the Blue River Valley. The plan

does not take into consideration the engineers' plan except as to the reduction of sedimentation in the Tuttle Creek Reservoir. The Soil Conservation Service has surveyed the Blue River Basin, and yet has no opinion as to the advisability of building Tuttle Creek Dam.

Mr. JONES. At that point let me ask you when did Congress authorize the Department of Agriculture to make a survey of the watershed area?

Mr. COLE. When?

Mr. JONES. When? Do you recall?

Mr. COLE. My understanding is it has been very recently, Mr. Chairman—very recently. Money was furnished for the survey very recently.

Under the present agency-congressional committee framework it is impossible for one agency to coordinate its efforts with another. It appears to me to be an excellent example of the right hand not knowing what the left is doing.

I am convinced that the two agencies are doing essentially different jobs, but that there is some overlapping of their work. These two agencies, taking such divergent approaches to flood prevention, can act as checks and balances to each other in the lower Missouri River areas if proper framework for coordinated effort is established.

Therefore, I respectfully suggest that the end result for which your committee should strive is to require that flood-control planning in any one watershed be on a joint, comprehensive basis, with the agencies coordinated in every way to achieve a balanced, integrated plan. This procedure would accomplish two results, namely: (1) Comprehensive planning and construction in fact rather than in theory; and (2) establish greater unity among the people in the valleys, because each segment of opinion will then be jointly represented in planning and construction.

I realize your study involves much more than flood control in the Kansas River Basin. I am not able to discuss the problems of other areas having substantially different topography and water needs. In my area, we have need only of flood control. It would seem to me, however, that the principle which I suggest for planning in the Kansas Basin would operate in all areas of the country—that is, each watershed be given, in reality, a comprehensive and coordinated study, and not a piecemeal one-at-a-time study.

Mr. JONES. Just one moment, Mr. Cole. I would like to call your attention to the fact that in connection with your statement about the Corps of Engineers' work and their delay from the time of authorization until the request for the money for construction, the Soil Conservation Service was authorized in 1937 to do that work.

Mr. COLE. Oh, yes.

Mr. JONES. And it is not ended yet.

Mr. COLE. They were given an authorization to make many watershed surveys at that time in connection with many watersheds. Does the chairman mean that there was a definite authorization on the Blue Valley?

Mr. JONES. For the survey. The same type of survey as conducted by the Corps of Engineers. It points up the fact that they were not made simultaneously, and consequently the work was not concurrent, which brought about the very thing you pointed out.

Mr. COLE. That is true.

Mr. JONES. As far as the actual delay is concerned, there has been just as much delay or more delay in the Soil Conservation Service in making their survey.

Mr. COLE. I certainly agree with that, Mr. Chairman, and I do not mean to indicate that the delay has been solely on the part of the Engineers. By way of explanation, both the Corps of Engineers and the Soil Conservation Service have been delayed in their respective programs. Despite the fact that the Public Works Committee has given both agencies authorization to move ahead, the lack of appropriations has held up the Soil Conservation Service at the survey and planning level, and has held up the Corps of Engineers at the construction level. The Corps of Engineers has projects that have long been authorized without any construction being started. The Soil Conservation Service has long had authorizations to survey areas which have yet to be surveyed.

Mr. JONES. If we are going to continue in the future, we hope we can eliminate these separate and unilateral undertakings without the concurrence of other agencies, but so long as we have $1,000,000 for one agency to make surveys and none for another, and several million for another—I do not know if we can ever accomplish any comprehensive survey program until we do have a joint undertaking which is supported by appropriations.

Mr. COLE. I am in thorough and absolute agreement with the chairman and believe very definitely that the responsibility for the delay does not rest with one committee, one agency, one individual, or one policy group. I think it is a matter of lack of coordinated effort on the part of all of us responsible for the situation, including the Representative from the First District of Kansas.

This proposal will require that authorizations for study be made concurrently with proper direction to the agencies so as to assure their complete cooperation. I realize that this indicates more integration of congressional committee action, but unless this problem is met squarely, I believe we shall continue the present sharp difference of opinion among our people.

It has been said that the proposal for "further study" will only result in "further delay." If this be true, I would not make this proposal. I support Tuttle Creek Dam because it is authorized and its plans completed. There should be no further delay of the only project now ready for construction.

Your committee, however, is aware that some considerable time will elapse before the completion of all of the other projects proposed for the Kansas Basin. If we start now on the plan I suggest, it can be put into effect without additional delay.

In conclusion, I want to refer to another proposed policy which deserves your attention. I believe the States have some responsibility in the formation of soil-conservation districts, watershed control, and flood prevention. Some State legislation may be necessary to accomplish this objective. I am of the opinion that those who receive the benefit of flood control and soil conservation should pay a part of the benefits. This is true with respect to those living upstream as well as the people in the cities. I commend this problem to you for serious study.

In other words, I am leaving some unanswered questions, Mr. Chairman, quite truthfully. It is a very great and very complex and very difficult problem.

Mr. JONES. We appreciate the observations that you made, Mr. Cole. I know nobody in the Congress is more familiar with that situation out there than you because when we were out there last fall there was certainly a divsion of opinion as to how to proceed with whatever works were necessary to accomplish partial or complete flood control in the area.

Mr. COLE. Mr. Chairman, may I interpose there that if I seemed to be critical of any committee or agency of Congress it is only because——

Mr. JONES. We must share in the responsibility for such things as happened there. I do not see how the Congress can escape being criticized for its failure.

Mr. COLE. That is right. It is only because I am trying to find some means by which we can get a greater unity on the part of everybody concerned—the people in the areas affected, the agencies and the Congress. I am quite sure if everybody has an opportunity to be heard and they feel that a proper investigation and a competent investigation is made of the entire subject, then in my opinion at least there would be a more unified acceptance, or at least the greater majority of the people will accept it.

Mr. JONES. Let us go to one of the projects now, namely, the Tuttle Creek Reservoir. You recall when the Congress authorized flood control there and when that report of the engineers came before this committee. There had never been a project where witnesses were heard as completely as on the Tuttle Creek Reservoir. We heard witnesses and witnesses in that area.

Mr. COLE. Oh, yes.

Mr. JONES. We have also been in attendance to see the flood conditions that prevailed there. It is somewhat strange to me and to the rest of the committee that there should still be a controversy as to where you are going to put that excess water if you do not have some reservoirs to put it in. I think that the divisions of opinion that exist throughout the communities where the floods do prevail accounts for the fact that no money was appropriated this year for that project.

Mr. COLE. That is probably true. Mr. Chairman, all of the disagreement with respect to the need for large reservoirs is not centered in the Blue Valley. By that I mean many people outside of the Blue Valley in the district are opposed to big dams. Why? Because they have been told that watershed control and soil conservation practices will do the job either completely, as a substitute, or a modification.

Mr. JONES. Do you subscribe to that theory?

Mr. COLE. No. I have come to the conclusion that the big dam is necessary. I will say this to you: That I am still of the opinion that the proper approach to flood prevention is through beginning with watershed control and soil conservation, stopping the water where it falls. I feel there has not been yet a proper engineering study of the impact of watershed control and soil conservation upon the big dams. I feel that very sincerely. I have nothing to prove it so far as engineering is concerned.

Mr. JONES. You have a lot of proposed projects such as the Sandstone Creek, the Washita, the Trinity, and the Salt-Wahoo.

Mr. COLE. Yes. I have attended those.

Mr. JONES. There has been a recent report of the river committee on the Bree, where they estimate the projects will take anywhere from 10 to 15 years for completion. The capital improvements in some of those projects in the main do not exceed 25 percent of the total cost. Yet over a 10-year period most of the costs will be made up of investing in payments to the individual farmers for extraordinary land-management programs.

Mr. COLE. That is right.

Mr. JONES. Multiplying those watershed-treatment programs on the land, if we were to take out a comprehensive program as contemplated in the Pick-Sloan plan, which will take from $12,000,000,000 to $13,000,000,000 in the Missouri alone, and multiply that for every watershed, I do not know where you are ever going to get the money that is needed to do all the work that needs to be done.

Would you like to comment on that?

Mr. COLE. Yes, I would, because that is part of the great frustration with which I find myself faced in connection with all of these great projects and proposals for flood prevention.

As I view the future, authorizations and appropriations for construction of flood-control projects—they spiral into almost incredible figures that seem to be beyond comprehension, not only in amounts, but in time. I do not know when this Government can ever find the money or the time to accomplish these purposes. From my point of view we must make a start. We must do something. As I saw the great destruction of these floods in Kansas certainly I think I would be remiss in my duty in not doing what I can do to do something to prevent that. The things that Congress may do may not satisfy me. The things that the agencies may do may not satisfy me, but again let us take the example of Tuttle Creek.

People are going to be disappointed at what Tuttle Creek is finally going to accomplish. It is the key project. It is the one thing now authorized and ready. However, I will not take the responsibility of sitting here and saying the thing looks so farreaching and so distant into the future that I do not know when they could ever accomplish full flood control. I am not going to sit here and say to this committee or the Congress, or the people in Kansas, that we should not do anything.

Mr. JONES. Do you believe that the agencies out there have contributed to the misunderstanding that is abroad in that area?

Mr. COLE. That is a difficult question.

Mr. JONES. It is a very real question that we are attempting to deal with in this committee because we want to stop this.

Mr. COLE. I would say yes.

Now, Mr. Chairman, in that connection in the top level of the agencies they have not. They have not. Their statements which they made have all been clear and understandable with no conflict. But some offhand remarks made by some people below the top level may have contributed to it.

Mr. JONES. Do you think the agencies have been very zealous in trying to get their programs in over the others?

Mr. COLE. I am inclined to think so.
Mr. JONES. That is a problem we are trying to deal with.
Mr. COLE. I am inclined to think so.
Mr. JONES. We hope to put some restraint on them somewhere.
Mr. COLE. Yes, I am inclined to think so.
Mr. MACK. Mr. Chairman.
Mr. JONES. Mr. Mack.

Mr. MACK. Mr. Cole, you commented on the magnitude of this flood control problem. You may be interested in knowing that Mr. Straus, the Commissioner of Reclamation, appeared before our committee the other day and testified that the works contemplated by the Army engineers and the Reclamation Service in the Missouri Valley and its tributaries would cost $3,100,000,000. That does not include any of the works upstream by the Department of Agriculture. Mr. Straus said that we would be very fortunate if this job could be completed within 40 to 50 years.

Mr. COLE. Well, I thoroughly understand that statement.

Mr. JONES. The most serious problem in the entire Missouri Valley and its tributaries is right in the area that was flooded last July. Is that not true?

Mr. COLE. I think so.

Mr. JONES. And that is the area which should receive immediate attention to prevent a recurrence of what happened out there in 1951?

Mr. COLE. I think so.

Mr. JONES. Are there any further questions?

Mr. ANGELL. Mr. Chairman may I say this: I do not recall the exact figures for the Columbia Basin project over-all, but it would cost in excess of $3,000,000,000. Regarding flood control we had very serious flood problems 3 years ago which destroyed millions of dollars worth of property and a number of lives. Every river basin throughout the United States is confronted with the same problem. So long as the sun shines and the water falls and the snow accumulates and melts we are going to have floods. We have developments on the lower stretches of the river basin where we are going to have damage. We have expended overseas during this same critical period adequate funds to have done all of this work. Many hundreds of millions of dollars have been spent overseas for river and harbor control and flood control and development of hydroelectric plants and industries of that very same type that we need here. If some of that money had been expended here we would have taken care of some of these critical problems.

Mr. MACK. I would like to make the observation since the conclusion of War II we have expended overseas $48,282 million on these give-away programs to foreign nations.

Mr. JONES. If we can return to this country I would like to point out to you and make this observation along with the gentleman from the Columbia River that we have accomplished 100 percent flood control on one of the largest streams in this country, the Tennessee River, at a cost of approximately $300,000,000.

Mr. COLE. That is most interesting. I am not familiar with that at all, Mr. Chairman.

Mr. JONES. The total cost for the entire program up through 1950 was almost $1,000,000,000.

Mr. COLE. You say the Tennessee?

Mr. JONES. Yes. $450,000,000 of that was charged to hydroelectric generation and the balance to navigation. $300,000,000 is charged to flood control.

Mr. COLE. Of course, you have a topography there that is considerably different from our flat terrain in Kansas.

Mr. JONES. Yes, but the problems are essentially the same. That is, retaining the water where it falls and also to keep the excess amounts in reservoirs.

Mr. COLE. That is very interesting.

Mr. JONES. Thank you very much.

Mr. COLE. I appreciate your courtesy.

Mr. JONES. Would you like to present these witnesses who are to follow you in any specific order?

Mr. COLE. I am sorry, Mr. Chairman. No, there are three witnesses, Mr. Stockwell and Mr. Payton on one side and Mr. Breidenthal on the other.

Mr. JONES. Do you have any preference as to the order?

Mr. COLE. Mr. Stockwell first.

Mr. JONES. Mr. Stockwell, we will be glad to hear from you.

STATEMENT OF GLENN D. STOCKWELL, PRESIDENT, BLUE VALLEY STUDY ASSOCIATION AND VICE PRESIDENT OF THE KANSAS WATERSHED ASSOCIATION

Mr. STOCKWELL. Gentlemen of the committee, my name is Glenn Stockwell, Sr.: I am president of the Blue Valley Study Association and vice president of the Kansas Watershed Association. This latter is a federated association of the organized watersheds of Kansas and various affiliated civic groups that are interested in the orderly development of water resources and a realistic, feasible flood-control program.

I am glad of this opportunity of appearing before this committee, in order to express the viewpoint of those of us who come in direct contact in the field with the various Federal agencies concerned with flood control in our State. Water or the lack of water is one of the major problems of our State. We believe that the land, water, and people of a region are inseparable and should not be divorced for separate considerations. The economic and social patterns of a people must be considered along with the soil, topography, and hydrological data. It may appear to Congress that the people of Kansas are confused on the question of flood control. But how else can we be? When we have a flood problem and seek advice, to whom shall we turn? On the Blue River we have three separate construction agencies. Shall we shop around to see which one has the best deal? Likewise, when we come to Congress—and I am not criticizing—we are not sure which committee to consult about our complex problems of water management.

Mr. JONES. At that point, what question is there in your mind about what committee to come to in Congress to seek approval of flood-control works?

Mr. STOCKWELL. I might have to elaborate on that in my answer first. I recently sat in consultation and in a policy-setting meeting with one representative of two different agencies.

Mr. JONES. What agencies were they?

Mr. STOCKWELL. The Department of Agriculture and the Corps of Engineers.

Mr. JONES. Who was the Department of Agriculture representative and what did he tell you?

Mr. STOCKWELL. This was an executive committee hearing, but it was represented by Mr. Young, Mr. McClymonds of the USDA Office and General Shingler and Colonel Lincoln.

Mr. JONES. Who were the people who stated to you there was some doubt of the committee in Congress that had authority?

Mr. STOCKWELL. We spent several hours that day in arguing whether we were interested in preventing flood losses or having flood control. There are two vitally different concepts of the question. The Department of Agriculture was interested in preventing of flood damages. Whatever appropriations there are for that come from the Department of Agriculture and we would probably seek relief in that committee. With the Army engineers we would seek relief——

Mr. JONES. Yes, I know, but let us go back now to the question in which you say there is some doubt in the minds of the people out there as to what committee would have jurisdiction over flood-control works, according to Mr. Young and Mr. McClymonds?

Mr. STOCKWELL. Not according to their statements, but the philosophy that developed.

Mr. JONES. The thing I am trying to get at, Mr. Stockwell, is that it may appear to Congress the people of Kansas are confused on the question of flood control. When we have people going out there who are irresponsible and do not know enough about the subject matter to represent the agency of the Government, then we want to get it clear here so that you will not have any recurrence of this misunderstanding. Mr. Young certainly has had sufficient experience to know what committee of Congress would authorize flood-control works. So maybe that accounts for part of it.

Is General Shingler that confused too?

Mr. STOCKWELL. Not necessarily. That is, our confusion would be, where do we seek funds for the Soil Conservation Service as the preliminary work?

Mr. JONES. Now, you knew that the Soil Conservation Service had the authority to make a survey in that area?

Mr. STOCKWELL. Yes.

Mr. JONES. And that survey was passed by the Public Works Committee of the House. Is that right?

Mr. STOCKWELL. Yes.

Mr. JONES. I cannot understand why Mr. Young and Mr. McClymonds would have some doubt as to who would authorize it.

Mr. STOCKWELL. If I may digress there, the preliminary work—I believe the Secretary testified the other day that before they can put in the flood-control work——

Mr. JONES. We are asking you these questions for the simple reason that we want to get it clarified in the minds of the people out there. I agree with you 100 percent there has never been a group of people in the world as confused about flood-control work as the people in that valley. So we have heard it over and over and over. Since that time we have had one of the largest floods on record. Let us start all

over again and see if we cannot get the confusion out of the people's minds and then see if we can get something accomplished out there that will not cost the Treasury of the United States $30,000,000 every time it turns around in order to conduct rehabilitation work out there and keep that land in production and eliminate the loss of property. That is the reason why I am asking you those questions about the confusion. If there is confusion on the part of the Congress we want to eliminate that confusion. If there is confusion being brought about by statements of agents in the field we want to get it eliminated. It is a burning question with us.

Mr. STOCKWELL. The flood control on the watershed consists of two parts: The soil conservation that must be done on the land and the other is the construction of your small water retarding structures in the small watersheds. The regular soil-conservation program is a part of getting that work done on the land. It is, you might say, the basis or root of the thing. But it is handled through the Department of Agriculture Committee at the present time to get your soil conservation.

Mr. JONES. It is handled where?

Mr. STOCKWELL. The soil conservation—the SCS—their soil-conservation money is what we are using now and the soil-conservation money regularly comes through the Agriculture Committee.

Mr. JONES. But you are asking for extraordinary works.

Mr. STOCKWELL. Extraordinary. There again we do not know where the extraordinary starts and the ordinary ends.

Mr. JONES. There has been a resolution passed by the Flood Control Committee, predecessor of the Public Works Committee, in 1937. A report has not yet been received by the committee. When we will get that report up here we will proceed to consider it, but there certainly should not be any confusion on the part of the people about the general appropriations that are made for soil-conservation work throughout the country, and that is to be performed by the Soil Conservation Service as part of the watershed development program in the Blue Valley.

I am sorry the people out there have not explained to you the difference between what the general nature of the work is and that extraordinary work.

You may proceed.

Mr. STOCKWELL. The first recommendation that we would make is that activities of the Federal agencies concerned with flood and runoff control be coordinated, either by executive or legislative action and if that is impossible to achieve, then their flood-control functions should be consolidated into a single agency. This controversy cannot be solved by a delineation of area or jurisdiction.

To elaborate on that, previously we have considered everything above Tuttle Creek Dam to be in the jurisdiction of the Department of Agriculture, and anything below that, if you took the highest structure that was proposed by the Army engineers as a delimitation area of the watershed, that was it. In the discussion of the last 6 months we find there is no delineation of the area where they will do their watershed work.

Mr. JONES. You mean at the interagency meetings out there they have not resolved the differences between the agencies that will do the work and what location it shall be done in?

Mr. STOCKWELL. Yes. One agency says to the other agency, "You are encroaching on our prerogatives."

Mr. JONES. What are the intentions of the two agencies involved?

Mr. STOCKWELL. The Department of Agriculture comes in and proposes a program. If they dare say they can control water on the main channel then the Army engineers agency comes up and says, "You are encroaching on our prerogatives. The 1936 law says we have control of floods and you can control the runoff from the watershed."

You can imagine two agencies arguing whether the one above is encroaching on the prerogatives of the one downstream.

Mr. JONES. Go ahead.

Mr. STOCKWELL. The problems of a watershed are one problem and cannot be solved separately.

Since the land, water, and people are inseparable, it is important that the Federal Government shall, to the maximum extent practicable, seek the advice, assistance, and cooperation of the people residing in an area and of their State and local agencies. In a democracy any necessry public activity should be performed by the lowest practicable unit of Government. Water is life and if we remove the control of the waters from the people we deprive them of life. The ownership of the water was reserved to the people by our Constitution and the people of the individual watersheds should be encouraged to assume the responsibility of planning for its use and control.

As a corollary to this responsibility, we recommend that the costs of flood-control projects should be paid by the beneficiaries in proportion to the benefits received in so far as is practicable. Local, State and regional benefits should be reimbursable to the Federal Government.

Mr. JONES. Let me ask you a question there. What do you have reference to? Will you comment on that a little bit further as to what items shall be reimbursable to the Federal Government?

Mr. STOCKWELL. The local benefits from flood control.

Mr. JONES. What items of cost?

Mr. STOCKWELL. A proportionate share. In any reservoir there is a point immediately below that has a local benefit. There is a regional benefit to the State down through the river channel below it, and there is a further national interest, but I do not feel the national interest in our area is paramount. Ninety percent of the industrial damage of the 1951 flood occurred in the two Kansas Citys. The dam or the reservoir has a justification sheet set up showing this much annual cost and this much annual damage. If we estimate or calculate the annual damage we should be able to locate the area where that damage occurs and say to these people, "Your fair share of the cost is this." Then the fair share of the cost of the Federal Government is this.

Mr. JONES. In other words, the items should be reimbursable items to the Federal Governments for expenditures in proportion to the benefits?

Mr. STOCKWELL. Yes.

Mr. JONES. There would not be any Federal investment then, would there?

Mr. STOCKWELL. There is a Federal interest in there. Communications for the war. That might disrupt the war effort.

Mr. JONES. Let us go back to the Department of Agriculture program. The beneficiary of that program is the landowner himself.

Mr. STOCKWELL. Not altogether.

Mr. JONES. Applying the same reasoning.

Mr. STOCKWELL. The national interest will lie in the preservation of the food supply and the possibilities for the production of food. The agricultural loss each year is of national interest.

Mr. JONES. Why should it be a matter of national interest with regard to the farm owner and why should it not be a matter of national interest with regard to the fellow who owns a plant down in Kansas City, who is being benefited by the Tuttle Creek Dam?

Mr. STOCKWELL. There is both a personal local interest and a national interest in that plant.

Mr. JONES. How do you draw the distinction between the Federal interest on the one hand and the lack of Federal interest on the other? The interest of the farmer is direct.

Mr. STOCKWELL. Yes.

Mr. JONES. It is not a product, but it is a direct payment to the farmer. You say it possesses national interest whereby the Congress would be justified in making appropriations to pay the individual farmer for carrying out soil-conservation practices to protect his own land.

Mr. STOCKWELL. A small part of it. That is, anything that has a long-range view concerning this land for preserving it for the national interest and succeeding generations. But the immediate benefit is largely to agriculture and they pay a large part of it.

Mr. JONES. You think that the ratio of payments or reimbursements to the Federal Government should be proportioned on a scale similar to that used by the Department of Agriculture in making individual payments or ACP payments to the farmer?

Mr. STOCKWELL. You cannot say in that proportion, but on that theory. That is, in one project it may be 50 percent local and in the other it may be higher.

Mr. JONES. Since flood control is a national problem and there must be some degree of uniformity in carrying out certain policies of the Federal Government, what would you do with a river like the Mississippi River? Would you make Tuttle Creek Dam an ultimate benefit to St. Louis, to Memphis, and to New Orleans?

Mr. STOCKWELL. No. The Mississippi is 15 days' river flow from Tuttle Creek Dam. If anybody has the human judgment to operate Tuttle Creek 15 days in advance of the flow of the Mississippi it will take better men than we have today. Last year the Army engineers could not give 30 minutes' warning to Kansas City on the height of the flood in the Kansas River. The industries were flooded out because they did not have 30 minutes' warning of the dikes going out.

Mr. JONES. It did not affect the ultimate capacity of the Mississippi River. Any dam on a tributary that will keep the water from going into the main stream will certainly contribute to the over-all problem of flood control in the lower Mississippi River.

Mr. STOCKWELL. Unless it is operated to coincide with the heights it will not. The water discharges out of the reservoir could hit at the wrong time.

Mr. JONES. The Tennessee River has been affected in its flood-control dams by holding water until the peak flow down below is passed.

It contributed quite a bit on the flood plains. I am just wondering how you are going to make an allocation of those costs.

Mr. STOCKWELL. I admit it will be a benefit to the Mississippi, but it is incidental and not because of the operation. That is, Tuttle Creek is authorized as an "operational dam." That is, the gates being raised and lowered. You have to predicate your operation on some base. If you can predicate your operation 15 days ahead of time you are pretty wise.

Incidentally, by accident, you will once in a while cause a reduction in the flow of the Mississippi. The next time you might operate your gates to increase the crest of the Mississippi. It is based upon a historical record. Your justification sheet says, "Now, this is what we have done in the past."

Mr. JONES. Going into the benefits that should be reimbursable, what would they be? You know in the protective works down in Kansas City they require local participation. At Tuttle Creek that reservoir does not require local participation. Do you think it should require it?

Mr. STOCKWELL. I think it should require it.

Mr. JONES. How would you set a formula by which the beneficiaries of that dam would pay items that should go back into the Treasury?

Mr. STOCKWELL. That is a pretty large question.

Mr. JONES. You proposed it, you know. I did not propose it.

Mr. STOCKWELL. If the justification justifies a benefit at Kansas City because of so much reduction in height you would know what water height the dam was going to control. If you can calculate the benefit or if you are establishing a benefit in your justification sheet, you have to know the area that that applies to or else you could not establish it. In other words, the Army engineers or the agency there has to establish a benefit for this dam in their justification and they allocate different figures to certain areas. In the Tuttle Creek justification it says $37,000 in annual benefit between the dam and the mouth of the river. So much agricultural benefit on the Kansas, and so much benefit to Topeka, and so much to Kansas City. It is listed in the justification sheet. That is the proportionate share.

Mr. JONES. How are we going to adopt a Federal policy to take into account those things? Let me go back to the Mississippi River again.

I suppose you think the works on the Ohio River should be charged to Cairo and other cities there.

Mr. STOCKWELL. No. It is a regional thing within your immediate distance.

Mr. JONES. You would not want to give one area a dam and charge it to them and then in the next area turn around and say that this is a regional proposition and is contributing to the whole basin, and consequently we are not going to make any allocation of costs to the beneficiaries of this dam.

Mr. STOCKWELL. Frankly, I think that the entire costs should be reimbursable, but the national interests should be for the extra profit.

Mr. JONES. If the beneficiaries are going to pay all those things back into the Treasury of the United States, why do not the States go ahead and make these investments? We have a pretty heavy debt up here.

Mr. STOCKWELL. That is one of our objectives in Kansas. It is to get a law through in Kansas where we can do that.

Mr. JONES. Would you make that law broad enough to take care of the work on the individual farms?

Mr. STOCKWELL. Yes.

Mr. JONES. Then we have no need to concern ourselves about the works needed out there.

Mr. STOCKWELL. I think that is along the right line of thinking that in the ultimate end it should be returned to the local people if we are ever going to get it done.

Mr. JONES. You already have the authority. You possess that. The people of Kansas possess that. If you want to undertake it it would not take you but very little time to get a Federal license to build all the dams out there. We would be delighted to be relieved of any obligation on the part of the people of this country to build dams that you could build for yourselves.

Mr. STOCKWELL. We would like for us to do it. Of course, the thing that goes along with that is that we should be relieved of the obligation of taxes to build dams on the other river systems.

Mr. JONES. I beg your pardon?

Mr. STOCKWELL. That is, the unified program that each State does the works, so we will not be taxed for building the other dams in the other States.

Mr. JONES. You could be relieved that much. Maybe the people of the other States would not agree with that, but in other words, there has to be some start somewhere, so you would be the first to raise your hands and say, "We will do it all ourselves." I am quite sure you could not get the people of Louisiana and Mississippi to take care of your water if it ever flows over, to agree to that, but your contention is in its final analysis all you need is to get the Federal Government out of there and you will do the work.

Mr. STOCKWELL. No, but my contention is if it is so valuable and so feasible we should be willing to pay part of the costs.

Mr. JONES. If you are going to the Department of Agriculture I am quite sure they would welcome any thinking along that line, because they could hurry up their work and we could get something done pretty fast in there to carry on the work on the individual farms if you would assume that responsibility. It will not take you long to get their program over with.

Mr. STOCKWELL. There are several projects in the State that are going ahead on that basis now in the small local watersheds. There are two or three small reservoirs put in at Tescott, Kans., this winter—what we call the Schippel Ditch at New Cambria.

Mr. JONES. You go back out there and sell your people on it and you will get some fast action up here.

Mr. STOCKWELL. I think the ultimate solution will be that we will do it ourselves.

Mr. JONES. What is the occasion for your being here now then? Certainly the Federal Government could not possibly interfere with you if you wanted to undertake to go it alone.

Mr. STOCKWELL. It is an over-all policy. It is a national policy, and as I say, if we do it the other persons should do it, too.

Mr. JONES. That is true.

Mr. STOCKWELL. I qualify my statement here within the practical limits of what we could do.

Mr. JONES. All right. You may proceed.

Mr. STOCKWELL. As a prerequisite to Federal participation the States should be required to adopt uniform benefit district laws, to assume their share of the costs. A further prerequisite should be a local zoning ordinance to control occupancy of the flood plains in highly dangerous areas, where economic justification of flood control is lacking.

We recommend that Congress establish uniform standards of justification by legislation. In addition to the actual costs of construction, the following items should be considered:

1. Loss of food and fiber production resulting from the destruction caused by flood-control structures;

2. Economic loss incurred by surrounding areas;

3. Costs of relocating and rehabilitating people displaced from reservoir sites; and

4. Social impact resulting from the disruption of the community life of these displaced people.

Proper appraisal in monetary terms, if possible, of such largely indirect detriments, resulting from proposed water resources developments, will be helpful, and in some cases controlling, in determining whether a given site should be used for such a development or for some other purpose.

No initial construction appropriation should be made until detailed project costs are available to Congress.

Reappraisals of all Federal projects should be made from time to time. Changes in soil, people, economic levels, and development can occur that will change the economic justification of the project. It would not be realistic simply to apply a price level index to both sides of the equation. Costs are fixed at the time of construction but the benefits will vary as price levels fluctuate. Any project where the project cost exceeds the authorization cost by 25 percent should be deleted. Also any project authorized for 10 years and not constructed should be automatically deleted.

Mr. JONES. Let me ask you a question at that point. You say if a project is authorized and no construction is started within a period of 10 years it should automatically by statute be deauthorized.

Mr. STOCKWELL. Yes.

Mr. JONES. Do you realize it takes us 10½ years from the time that a survey authorization is approved until the final construction starts?

What you have in mind is, we should have a schedule of work and pursue it within reason?

Mr. STOCKWELL. That is what I was going to say. When a project is authorized and the project cost is in, the Congress should make a continuing appropriation for that project and get it over with as fast as they can.

Mr. JONES. By extending it the economic factors that were originally considered may be in such disproportion that it would not any longer be economically feasible to undertake a project.

Mr. STOCKWELL. If Tuttle Creek were built when it was authorized and put through it could have been justified at that time because your cost of things was taken into consideration. But now it may not be justified. If that had been a continuing appropriation made at the time of authorization you would have done it. You have to get these

things off your books some way—either build them or drop them out of the window.

Mr. JONES. Thank you.

Mr. STOCKWELL. No community should be forced to live under the threat of destruction with the resulting stagnation of life.

A criterion of priority should be established whereby Congress could determine which projects to build first. On projects that are nonreimbursable the priority should be established by a review of the benefit-cost ratio of the authorized projects.

Mr. JONES. I think there is no question but that the statement you just made in that connection is one which this committee should address itself to more than any other problem in the entire study for the simple reason that we are building projects today that on a comparative basis could not be sustained under any form of justification. We are giving priority to some projects that are considerably below the merit formula for being constructed. I think that is a fine observation.

Mr. STOCKWELL. On projects that are nonreimbursable the priority should be established by a review of the benefit-cost ratio of the authorized projects. Those with the highest ratio between benefits and costs should be given priority. On reimbursable projects the criterion should be the willingness and ability of the beneficiaries to assume the costs. As trustee for the expenditure of public money, Congress should spend Federal funds where they will give the greatest return to the general welfare. That is, flood control competes with many other public activities for the expenditure of funds. For instance, the national defense and general welfare are competing with flood control at the same time.

As an alternative to the construction of engineering structure for flood control the consideration of nonengineering measures should be given the fullest consideration. Relocation and research in structural design should be utilized wherever feasible.

There should be created an independent board for the impartial review and analysis of all Federal projects.

If the priority is set up here it would eliminate the need for a review board there.

No authorization or appropriation should be made until a favorable report is secured from such a board.

Mr. JONES. Of course, you realize trying to find that impartial person is the big question, because impartiality comes about by the simple reason that this organization says, "Old John over there on that board is not impartial because he is not giving consideration to our project, which we consider of paramount importance over another project." Then the other organization comes around and says, "Well, he is not being impartial for the simple reason he is giving priority to the other project. By virtue of his background and experience he cannot be impartial."

That is a big question. You know the Hoover Commission report came up to that impartial system and so did Governor Miller, who testified here. He talked about that impartial board. Where could we find those people who would be so impartial that they would satisfy every agency and every organization?

Mr. STOCKWELL. I say it is going to be hard to find. Dropping back a paragraph here, there would be a measure setting up your justification rules by legislation rather than by executive administrative rulings. The Congress would set up the justification and then apply it so that the priority would come to the highest one, and you would solve that.

Mr. JONES. How would you go about selecting that board? Would you have the President appoint them?

Mr. STOCKWELL. I make the following statement here: We take no stand on whether such a board should be responsible to the executive or legislative branch of the Government.

Mr. JONES. I do not see how you are going to have a board set up that is not going to be responsible to the Executive, who is going to have to make the appointment. You cannot divest the Executive of his powers. If the Congress takes it upon itself to become the executive branch of the Government I do not know how we are ever going to accomplish anything.

Mr. STOCKWELL. I can see your difficulty there.

Mr. JONES. If we were to appoint the board, that is. We have a board up here that serves every day reviewing some of these things, and I do not know whether you can call us impartial or not. It has been said we were not an impartial group here, especially some of these people who come in and want these projects that are not economically justified. I do not know how you are going to get that impartial board. Are they going to have to be confirmed?

Mr. STOCKWELL. If it is going to be an executive department they would have to be confirmed. I can see the difficulty of an executive review board. If they had the final say Congress could never put anything in that was necessary to the people. You could deadlock all improvement works right there.

Mr. JONES. The Congress still has that right.

Mr. STOCKWELL. Yes, but we would not want an executive board to have that right to say that we will not pass anything.

Mr. JONES. You would not take it away from Congress.

Mr. STOCKWELL. No. I said Congress is the one I would like to see work it out where they have the control in Congress either through a board or legislative standards of justification. We can come before the committee here and testify and we might not be able to come before an executive board.

Mr. JONES. Would it not impair the authority of the President? Suppose the President sets up criteria that are necessary to be considered by this impartial board in extraordinary times, and then that board under the direction of the President cuts off all money for this sort of work. Would that not be a proper exercise of the Executive power? I would think so, and I do not know of any way you are going to divest the President of his constitutional authority any more than you are going to take away from the legislature its authority.

Mr. STOCKWELL. But is it within the authority of the Congress to set up standards of justification?

Mr. JONES. We have established standards of justification.

Mr. STOCKWELL. That is not now established uniform standards of justification, I might say, so that the different agencies justify their things on the same basis.

Mr. JONES. At the present time there is an Executive order.

Mr. STOCKWELL. That is an Executive order.

Mr. JONES. In which the defense mobilization ingredients are included in the consideration of these projects as they reflect upon the defense needs of the country. It would seem to me that would be one of the authorities the President should possess, and there is no other place to lodge that authority than in the executive branch of the Government. We are just having an academic discussion now. All right.

Mr. STOCKWELL. We take no stand on whether such a board should be responsible to the executive or legislative branch of the Government, but we feel as taxpayers that such a board is vitally necessary to assure that the vast program ahead of us in economically sound and feasible.

I thank you, gentlemen, for your interest, and I think I have probably been helped as much as you have by the testimony here. I came into this thing last summer seeking a solution to flood control so that we could get a meeting of the minds of the people out there and of Congress and the operating agencies. It is a big problem, as you men know, and we began to realize it out there.

We appreciate your granting us the privilege of coming before you.

Mr. JONES. Mr. Stockwell, I want to say we appreciate your coming here. You made a very fine statement. It is sort of the milk in the coconut of the things we are dealing with. There is plenty in here to provoke our thinking. I assure you you made a very fine witness and we are delighted to have had you.

Mr. STOCKWELL. Thank you.

Mr. JONES. We are going to have Mr. Curran ask you a question or two.

Mr. CURRAN. Mr. Stockwell, as you know, the subcommittee has received several letters from you and also from Mr. Elmer T. Peterson. He has written sending some material apparently on your behalf. I would like to read several quotations from your letters and some of Mr. Peterson's writings to see if you can help us a little on it.

In your letter of April 6 you said:

> We in Kansas are vitally interested in flood control and especially interested in securing some degree of coordination among the several Government agencies named in the Flood Control Act of 1936, and subsequent acts.

Further in that same letter you said:

> * * * the lack of coordination between the several agencies was clearly demonstrated at the Topeka meeting. The several agencies were constantly bickering with each other as to the effectiveness of each other's plans. Either the area wherein each operates must be more clearly defined or else some coordinating body be established over them.

Mr. Peterson said his correspondence was with a relationship to yours. I do not mean to be unfair by asking you about another man's statement but this is a quotation from Mr. Peterson's letter which you might be able to shed some light on. He said, and I quote:

> I have attended many flood-control meetings and read many articles by Army engineers, and they all take their cue from General Pick. They go wide open, fighting the Soil Conservation Service flood-control program. Yet the leaders of the Soil Conservation Service are too timid and bashful to stand up for themselves.

Further in his speech he says:

The Soil Conservation Service has, in its own files and collections of engineering data the information that would blow the whole big-dam program out of the water so far as the prairie plowlands are concerned.

The third passage is:

If he (an Army engineer officer) had said "publicly claimed," his statement could be correct, but if he had heard statements made to me by technical and professional men, in confidence, in fear of reprisal, his statement would have been false.

His statement is that big dams are necessary and soil conservation would not give full flood control.

Is Garrison, Kans., near you? There is a man named Paul M. Jameson who ties his writing in with Mr. Peterson. He says:

It is sickening to read of the testimony of the men high in the United States Department of Agriculture before this subcommittee.

He means this subcommittee.

What sinister pressure is it that keeps them from telling the truth about what their program can really do?

I want to come back to one point. Are there any specific people in the Department of Agriculture that give the impression or statement out there that the soil-conservation work and the upstream work can really supplant the downstream work? The statements made before this subcommittee by the top officials of Agriculture have been to the general effect that the two programs are complementary and supplementary. There is an undercurrent that someone is saying that they are not and that they are alternatives. Can you shed any light on that?

Mr. STOCKWELL. Of course, before you can really determine that you have to define your total objective. If you are going to flood-proof the Kansas Valley you are going to need everything you can possibly think of to prevent a flood like last year. If we are going to control the floods that are feasible to control it is a different question. I was reading the testimony offered before this committee before I came up here, and I think I noticed in Department of Agriculture testimony that one of the men was testifying that they can control 6 inches of runoff on the agricultural program. If you are familiar with the amount of run-off in a flood area you know 6 inches is a tremendous runoff. It is in our area, at least. If we could control 6 inches of runoff we would control our floods. Yet the Department of Agriculture is not charged in the 1936 law with preventing floods. So why should they justify their work on downstream benefits?

They will not make an assertion they can control floods because they tell me that is the problem of the Army engineers to control floods.

Mr. JONES. Would you take issue with the statement made by Mr. Peterson in his correspondence?

Mr. STOCKWELL. Pardon me. I did not quite catch your question.

Mr. JONES. Do you take issue with the statements made by Mr. Peterson with respect to the things that he had to say in his letter?

Mr. STOCKWELL. No. I believe that this program will make the control of the floods to the extent that it is probably feasible economically to do it. It will not control total floods.

Mr. JONES. Do you believe that the agricultural program if finally completed out there can take care of a 6-inch rainfall without causing a flood?

Mr. STOCKWELL. It will take off the 6 inches of runoff. That is what the project is engineered for. Yes.

Mr. JONES. And that 6-inch rainfall would be of what duration?

Mr. STOCKWELL. Well, it would be bigger than a 6-inch rainfall. Six inches of runoff. We have a small percentage of our water that falls that runs off. If you look at the map, Tuttle Creek Reservoir as designed originally would handle 3 inches of runoff.

Mr. JONES. How much rain did you have up there in 1951 that caused that flood?

Mr. STOCKWELL. In the area below Tuttle Creek Dam they had 18 inches of rainfall. In the area above the Tuttle Creek Dam in the neighborhood above it it tapered off to 4 inches of rainfall up to 30 miles above.

Mr. JONES. What was the stream flow at the confluence of the Blue?

Mr. STOCKWELL. And the Kaw? The preliminary figures, that is, the nearest gaging station is 8 miles up the Blue. The preliminary figures reached last fall were 102,000 feet, with the maximum flow of the Blue. They revised it in the testimony offered by Mr. Dalrymple, head of the Geological Survey to the House Civil Functions Committee, which is in part No. II of their testimony, showing the flow on the Blue River at the time of the flood last July. It is in the record of the House Civil Functions Committee.

Mr. JONES. 102,000 cubic feet per second?

Mr. STOCKWELL. That is the one they submitted to me last summer, but they reduced it now to about 90,000 feet.

Mr. JONES. How many?

Mr. STOCKWELL. 90,000 cubic feet per second.

Mr. JONES. What is the flood stage at that point?

Mr. STOCKWELL. The bankfull stage is 20,000.

Mr. JONES. So you had in excess of 70,000 cubic feet per second over and above flood stage. Do you think you could find some place to put that water? That means at that flood stage 180,000 acre-feet per day were going past a given point.

Do you know of any way you are going to get a program of land treatment that is going to take off or utilize that much water?

Mr. STOCKWELL. Well, that is not absolutely. I said we will never work out an absolute program. Tuttle Creek Dam last summer would not have controlled this flood. You look the record up of the Geological Survey. You had a discharge during June of greater than the capacity of the reservoir, and you had a discharge in July almost equal to the reservoir capacity. The effect Tuttle Creek would have had is problematical. It all depends on your hindsight as to whether or not you say, "We would have operated it this way." But you had that water come down just over the crest of the reservoir.

The Army had one reservoir in Kansas last summer, the Kanopolis Reservoir. We have to judge if they had had Tuttle Creek they would have operated it or operated all of them like they operated Kanopolis. Kanopolis was practically full at the time of the flood. There was only 4 inches of run-off above Kanopolis and not the 9 inches that fell below Kanopolis. So you would have had a full reservoir if they had operated Tuttle Creek like Kanopolis.

Mr. JONES. You would have had a full reservoir. You are going to have to start some place, though, to put the water if you are going to have an excessive rainfall.

Mr. STOCKWELL. We will never be able to store that water. We will have to let it run off in an open manner with a fixed discharge so you will not depend on human judgment. A dam with a fixed discharge like we have in the Ohio would have had that water down. Then you will have that flooding downstream. You are not getting away from the fact that you will have some flooding in a flood like that. But you had better get a little of it instead of having one big one. Our agricultural program will help on the land. You may have to have these structures, but let us have open structures.

We were not going to discuss methods of flood control here, but these are methods that will hold the water back. In your Army engineer's structures if they were open so the water could pass through you would get away from that human element.

Mr. JONES. Your testimony on the Blue is comparable to the testimony of the Department of Agriculture and the Corps of Engineers and I cannot understand what is giving rise to all of this dissension out there in that area.

Mr. STOCKWELL. On the Tuttle Creek Dam your authorization calls for a navigation pool covering 22,000 acres. You do not have even capacity enough for flood control. You might destroy 22,000 acres for navigation and another amount for stream-flow utilization.

Mr. JONES. You are not at variance with the Corps of Engineers on the need for water in the reservoir detention area, but you are opposed to them including navigation features in it that would not be justified.

Mr. STOCKWELL. If the reservoir is there it should be a flood-control construction, so the water's normal flow will pass through and it will retain the flood waters. In that way the operation is fixed. The thing will be drained automatically as soon as it can. The farmer can go back and farm the land.

Colonel Lincoln of the Kansas City Corps of Engineers came out this winter and said they needed full capacity of Tuttle Creek for flood control and recommended dry operation. No change in the construction, but just operate to eliminate the conservation pool. He was sitting at the table with me and said, "Mr. Stockwell, if you could get the upstream work to control the floods, we will then use Tuttle Creek as a storage reservoir."

The people of the Blue may have to sacrifice their land for a storage reservoir but there are no moral obligations imposed on the people of the Blue River to give up their property to protect anybody downstream.

Mr. JONES. Will you repeat that?

Mr. STOCKWELL. The people of the Blue River have no moral obligation to provide flood protection to correct the mistakes of those who build in the flood plain. You cannot say we have to give up our land to protect somebody downstream.

Mr. JONES. Well, we would never build a dam in this country if we did not have to have somebody give up some land.

Mr. STOCKWELL. Yes. There is an economic reason. I am saying this: I am saying they should be built for flood control, for economic reasons, but they should not be coming back and saying, "You people are selfish because you oppose that."

Mr. JONES. You oppose it on the grounds of navigation.

Mr. STOCKWELL. I oppose Tuttle Creek on an economic basis alone, that is, you are spending money for certain things there and you are not getting a return of money on navigation. I am trying to show you what the people object to. They object to this much land being destroyed for navigation. That is one thing here. There are too many things tied in there.

Mr. JONES. Would it contribute to the navigation of the area? If they include navigation features would it contribute to the navigation of the area?

Mr. STOCKWELL. No. It would eliminate some opposition. You are never going to eliminate all opposition to the reservoir.

Congressman Cole said it is not the people in the Blue Valley as much as it is the people all over the State that are wondering as to whether that thing is justified.

Mr. JONES. I can only say this: If 180,000 acre-feet per day of flood flow does not justify it then there is no dam in the United States that has ever been justified as a flood-control measure. With 90,000 cubic-feet per second passing by there, the cost in damages alone being over a billion dollars, and with the possibility of recurrence because of all those factors that are still in attendance and that contribute to that flood, I just cannot understand it.

Mr. STOCKWELL. There is a little creek on the south side of the Kansas River, Mill Creek, that comes in above Topeka, Kans. You can probably get the figures from the Geological Survey on the discharge, but the Mill Creek is not a big river like the Blue and was discharging more water than the Blue River at the time of the flood.

Colonel Lincoln in his presentation at the Inter-Agency Committee at Topeka on December 13 proposed six dams on Mill Creek instead of one dam at the mouth of Mill Creek and the Blue. He proposes six dams on Mill Creek, which is a little creek that runs up 50 miles, and yet it threw more water in than the Blue did in July.

Mr. JONES. Then you need more works in Kansas to take care of it if it has that much water.

Mr. STOCKWELL. It is the new concept of putting the reservoir on the poor land ahead of the river instead of at the mouth. The Blue River is the only one that has a dam at the mouth of the river, with 280 miles of river above it.

Mr. JONES. So you are opposed to Tuttle Creek?

Mr. STOCKWELL. I am opposed to Tuttle Creek. I think that American ingenuity will be able to find a solution to flood control without destroying its best agricultural land and imposing a hardship on the people that live there. We are not the selfish ones.

Mr. JONES. Of course, the Corps of Engineers and the Department of Agriculture and the Department of the Interior have pretty good engineers. They build most of these dams. I know of no way in which you are going to build a reservoir if we do not have the land under it to hold the water. That agitation will probably continue, and we will have a debating society out there from now on, but you are certainly making a contribution to the inactivity of the Federal agencies in keeping them from doing anything, it seems to me. From now on I do not think it is incumbent on the Federal Government to come to your rescue out there and make these extraordinary rehabilitation

appropriations, because we have paid out $30,000,000 last year. That is more than the land in the whole area is worth. It will take a long time to produce $30,000,000 worth of food products from the amount of land that is going to be taken out of production there. I do not know of any other way to do it.

Are there any further questions?

(No response.)

(Subsequently, the following letter was received from Mr. Stockwell:)

MAY 15, 1952.

Mr. CHARLES D. CURRAN,
Staff Director, Special Subcommittee To Study Civil Works.

DEAR MR. CURRAN: In view that we discussed methods of flood control in addition to policies, and were questioned concerning the conflicting methods, I feel that I should submit an explanatory note, not to be repetitious but as an attempt to clarify the record.

The question was raised about the ability of watershed engineering to control floods and as to how such an idea got started. Allow me to refer you to the transcript—vol. 7, page 40, Dykes * * * Agricultural program for Blue River would impound 6-inch runoff; page 62 * * * That land is flooded only periodically. Only once in 25 years would the maximum area up to the spillway be flooded; pages 72–73 * * * No downstream benefit is claimed because Tuttle Creek is already authorized. If those statements do not add up to flood control then I do not know what does. Soldier Creek at Topeka had 10.42 inches of runoff during the entire month of July last summer. The Delaware at Valley Falls had a total runoff of 5.39 for July 1951 (U. S. Geological Survey Circular 151). Mr. Jones asks where will we store and impound the vast amounts of water. There will not be any vast amounts of water in the channels if you can hold up to 6 inches of runoff. Maybe we in Kansas are long on logic and short on engineering. Watershed engineering may not spell "total" flood control but I feel that it does provide the greatest amount feasible. The Nation does not possess resources to install both the big reservoirs and the upstream work at this stage of development. It may not be feasible for all watersheds since the Blue possess highly porous soil and adaptable topography.

I wish to point out to the committee that the small dams proposed for the small water courses will be cheaper to build per unit of impoundment because:

1. Shorter haul for material.
2. Located on cheaper land.
3. Possible to use vegetative spillways.
4. Small contracts will allow wider competitive bidding.
5. No expensive relocation.

Why does the department not claim this benefit? The advice given in the field is—Pick a good place to land before you oppose the Army engineers.

I admit that this concept is startling and revolutionary. Too novel to stand alone at the beginning, hence a joint survey, but some day the Blue Valley will be honored not razzed.

Sincerely yours,

GLENN D. STOCKWELL, Sr.

Mr. JONES. Mr. Breidenthal.

STATEMENT OF WILLARD BREIDENTHAL, CHAIRMAN, FLOOD PROTECTION PLANNING COMMITTEE FOR GREATER KANSAS CITY

Mr. BREIDENTHAL. Mr. Chairman and members of the committee.

Mr. JONES. Mr. Breidenthal, we had the pleasure of being with you in Kansas City.

Mr. BREIDENTHAL. I recall the pleasure.

Mr. JONES. We are delighted to see you and we hope when we come to Kansas City it will not be for the purpose of visiting a flood sec-

tion, but for the purpose of looking at the accomplishments that have been made in flood control, so that you do not have them any more.

Mr. BREIDENTHAL. Gentlemen, you are all invited out there at the occasion of the completion of the flood-protection works for the Kansas River and the Missouri River below Kansas City.

Let me say, if I may, something about my connection with this program.

Mr. JONES. Do you prefer to sit down?

Mr. BREIDENTHAL. Thank you, I will.

It started in 1934 with the Water Planning Committee of the Natural Resources Board. We made a report to that committee with reference to the 308 reports and the recommended high levee plan for the protection of the Kansas Citys. That report was adverse to the theory of building levees higher and higher. We thought they could not be economically justified and that excess protection over and above the reasonable height of local levees could be obtained at a greatly less cost through retention reservoirs upstream.

We were asked to go back to Kansas City and form a committee representing all of the interests in greater Kansas City and finance ourselves to such an extent that we could employ the services of a nationally known engineer, not a local engineer.

We employed the late Frederick H. Fowler of San Francisco to work as our planning engineer and to work in conjunction with the Corps of Engineers in the preparation of a plan designed to give us the required protection.

We were also asked by this committee to attempt the passage of conservancy legislation in the State of Kansas which would permit the State to cooperate in connection with flood protection, soil erosion, and such projects. Our efforts to secure the passage of that legislation failed in 1937. The 1936 Flood Control Act following that was amended to provide for the taking care of the local expenses and cooperation that was made necessary under the 1936 act, so that in connection with reservoirs the Federal Government assumed the full responsibility.

We have never lost interest in those other features of the water and land problem. We are as strongly in favor of soil-erosion control through terracing and contour farming and through land treatment and practices as the farmers themselves.

You will recall that in 1934 and in 1935 and 1936 we were in a period of drought and these land practices are really and were primed then as an aid to a drought situation. Terracing and contour farming is supposed to permit the absorption of water into land for the benefit of crop production in the drier years. Now, it was never at that time argued as flood protection.

Let me outline here some of the things we have had to contend with in the matter of promoting the idea of flood protection.

At that time in 1934 the Water Planning Committee of the National Resources Board and the Corps of Engineers, through General Markham, were represented on that committee. He detailed General Edgerton as his representative to follow closely the program as it developed. The Blue Valley Study Committee was formed sometime after the authorization of the Tuttle Creek project, and I did not originally intend to mention any project specifically because I thought

you were not sitting to hear arguments for or against any particular project, but trying to evolve a program that would implement the construction of projects that are already authorized.

Mr. SMITH. If I may interrupt you there, Mr. Breidenthal——

Mr. BREIDENTHAL. Yes.

Mr. SMITH. Your thought is exactly what the purpose of the committee is. The discussion of individual projects was just to illustrate some of those things.

Mr. BREIDENTHAL. I merely wanted to illustrate here. The development of the opposition to a project started with the proposal of six different alternate plans, every one of which was studied and analyzed from the economic and engineering viewpoint with the result on all six of them—and two of them required the major project in a reduced form—the result was that each of the alternate plans required the use of more land. Each of them displaced more people and each of them rendered a negative answer on an economic justification of the ratio of benefits to damages.

Now, following that there was a period where farm ponds were advocated as flood protection. Then that was followed by the idea of farm terracing, and that was later and is today followed with what is termed the watershed plan or treatment, all beneficial to land, and none of which will yield benefits——

Mr. JONES. Let me ask you a question.

Mr. BREIDENTHAL. Yes.

Mr. JONES. Why is it each group is so antagonistic to the other's viewpoint?

Mr. BREIDENTHAL. It all boils down to one proposition.

Mr. JONES. We have not had that situation in any other part of the United States.

Mr. BREIDENTHAL. All right. You do not have that closely organized oppósition perhaps in any other location in the United States.

Mr. JONES. Do you know of any way you can get flood control with the volume of water that is there without having reservoirs?

Mr. BREIDENTHAL. We are satisfied and convinced that there is no solution for the control of floods on the Kansas River and the Missouri River below Kansas where they converge except the use of what is termed large reservoir storage pools; so that the problem of satisfying landowners whose first opposition was that they were unsatisfied with, and they might be right, what has been quoted as $110 an acre for their land. They say it is not enough. I do not know what they would be paid. I know that there is recourse to the courts and the service of the Department of Agriculture is employed, as I understand it, in determining what the value of the land taken is. I do not agree with Mr. Stockwell that they own their property without the right of the Government to acquire it for the protection of life and property and people in greater numbers. My right to own property is subject to the right of the Government and the subdivisions of the Government, who have the right of condemnation in order to acquire it for a beneficial use to the public. I think they own their land the same way.

The watershed treatment program is beneficial to the land. It may yield a certain degree of protection against ordinary floods, but as in last July, when we have a major flood, all farm ponds and all small check dams are completely saturated and full of water. It was the rainfall that might have occurred any time between the period of the

10th of June and the 13th of July, that caused the major flood. It could have come any time in that period. Why? Because you had the right conditions for it. You never get a major flood until you have those conditions.

I had the pleasure of sitting on a confidential committee appointed by the Governor of Kansas since the flood of 1951. Mr. Stockwell was a member of that committee. His position was then and is now that he is opposed to Tuttle Creek under any circumstances.

If this committee and the Congress are going to sustain that kind of an argument you must forego any right that you may have to take private property for the benefit of the greater numbers. I do not believe you are ready to surrender that, and that is the only thing that is involved here.

We had at Kansas City a loss in July estimated at from $500,000,000 to $1,000,000,000. It justifies the expenditure of more money for flood protection than had ever been dreamed of before.

Mr. SMITH. On the justification angle, Mr. Breidenthal, without regard even to the loss of the individual property owners and the State and local political subdivisions out there, the Congress itself had to appropriate out of the Federal Treasury $30,000,000 and some other sums purely to provide relief.

Mr. BREIDENTHAL. That is true, and let me say this: The community out there contributed something over $20,000,000 to its local protection works that are now in the process of being construed. The Government spent nearly $30,000,000 on it.

The damage to those structures by the flood was $8,000,000 itself.

Now, if the Congress is going to carry out the idea that is very definitely embodied in the 1936 Flood Control Act and the amendments to it in 1938 and 1944, that does not mean partial protection. It does not mean the building of local levees that are going to be washed out every few years and have to be replaced. It means protection that can be secured in our instance on only one way, and that is through the storage of the excess stream flow above the designed protection that can be economically justified in the upstream areas. That means that you must acquire some land on which to build these structures.

The result of this committee was, as I stated, the three members representing the areas which include the reservoir sites for Tuttle Creek, Milford, and Perry Reservoirs—all three of them stated that they were against reservoirs of that character under any circumstances and regardless of the justification. The oppostion to this particular project has gone beyond the watershed treatment idea, and small dams have been advocated instead of large dams.

Well, I think that any engineer, any competent engineer, will tell you that the small dam cannot do the service of the larger one. Of course, the large one might do the service of the small one, but you cannot put a large one where you can put a small one, because the capacity is not there.

Now as to dry dams and wet dams. We are not advocating that land should be acquired in that area or any other area for flood protection to be encroached upon by navigation or any other consideration. We want the dam constructed with the required flood protection, based on sound engineering, and if the local people want any other consideration included in that dam and there is provision in the law to put

those considerations in, and if there is available space, why, they are put in.

The group up there is not in a unit. Some of them talked dry dams and others said, "If we have to have a dam we want some water in it for recreation purposes and others." All of these things I have mentioned here have contributed to the confusion that now exists with reference to these projects.

I heard Mr. Stockwell say that Tuttle Creek now should have been built within 10 years after it was authorized and he thought—I am hoping I am correct, and he is here and can say if I am not correct in his statement—that he was not for it then and is not for it now, but he would like to get it killed by having it deauthorized because it has run 10 years. Well, we do not feel that way about it. We feel that we have got to stay in this fight until it is won. There is not any place to quit. We have either got to stay in there and fight or give up the idea of ever having flood protection, which we cannot do.

Let me call your attention to this: The Missouri River was not in flood in July 1951. It was contributing less than 80,000 second-feet at the time of the flood and went on down to 60,000 second-feet during that time. It was 10 feet below any stage that we had ever figured on at the time of a Kansas River flood. Therefore we of the great areas on the Missouri side of the river were saved from inundation, or else your damage at Kansas City would have been at least 20 percent greater than it was.

I have yet to hear of any sound or responsible engineer who had backed any of the suggestions I have mentioned here as being substitutes for flood protection in the lower reaches of that river. So it appears to us there at Kansas City, and the plan we finally adopted after 3 years of study and consulting work between our engineer—and we raised $50,000 to finance our part of this engineering—with some added protective works in the cities in the Kaw Valley, gave protection to all of them, including Junction City, Fort Riley, Manhattan, St. Mary's, Topeka, Perry, Lawrence, and Bonner Springs, and so forth, and contributed to the protection on the lower Missouri River below Kansas City and made a substantial contribution to the protection on the Mississippi River at St. Louis and below.

We not alone had the advice of our 1 engineer, the late Frederick Wowler, but I have here a document signed by the 13 chief engineers of the 13 railroads operating at Kansas City. Twelve of them are trunk-line railroads. They are responsible for flood protection on approximately one-third of the railroad mileage of the United States. Every one of them endorsed the retention-dam program. They all cooperated in the preparation of that plan; and the plan, as I stated, did not only benefit Kansas City, but contributed to these other towns in Kansas and all the towns and cities on the Missouri River below Kansas City and made a substantial contribution to the Mississippi River flood condition.

Mr. JONES. Mr. Breidenthal, do you think that the agencies themselves have contributed to the misunderstanding and conflicts in opinion that prevail in that area?

Mr. BREIDENTHAL. I do not believe so. I have heard time and time again—I have heard Gladwin Young and Mr. McLymonds make that statement that they did not and they were not infringing on the prerogatives or jurisdiction of the Corps of Engineers. They were

trying to do a job for their own departments that began where the Corps of Engineers left off.

Mr. JONES. What seems to be the whole bone of contention out there?

Mr. BREIDENTHAL. The whole bone of contention is involved——

Mr. JONES. In taking over the land?

Mr. BREIDENTHAL. In the acquisition of the right-of-way that is necessary on which to build these structures.

Mr. JONES. How can they be built without taking the land or bringing about some dislocation or inconvenience to the people who live in the reservoir area?

Mr. BREIDENTHAL. It is engineeringly impossible to do that.

Mr. JONES. Do you know of any reservoir of any consequence at all where they did not have this same experience?

Mr. BREIDENTHAL. Yes. We advocated Kanopolis. That is on the Smoky Hill.

Mr. JONES. I live on a reservoir of 55,000 acres, 35,000 of which are in my home county. I heard that same thing said that we cannot have flood control because look what we are losing over there. At the present time we have no floods because they built a dam.

Mr. BREIDENTHAL. Because they built the dam. That's right.

Mr. JONES. And we are economically far better off than we ever were because we are not sustaining annual losses and we are doing a job on the uplands which we probably could not do otherwise.

Mr. BREIDENTHAL. These major floods are supposed to occur in cycles of maybe 1 in 50 years. I do not know about that, but they have occurred in successive years. It depends on how long the wet cycle continues.

I have here an editorial printed in the Kansas City Star together with Sam Ray's cartoon on the 1951 flood on the Kaw and the 1952 flood on the Missouri. This, of course, reflects the attitude of the people out there, who are inclined to blame Congress for delay.

I know what you are up against here. You try in a complete way to hear everybody and every town.

Mr. JONES. I have been hearing ever since I have been on this committee about what is going on out there with respect to this plan and that plan, and here we are trying to get something done and we have no plan.

Mr. BREIDENTHAL. That is right. I conceived of this and I have attended enough hearings in the 18 years I have been connected with our local project out there, you might call it, although it is of national interest, as I have indicated, and there never has been a hearing here in Washington or any place else that there was not opposition. It is all based on trying to find substitutes for the designed reservoir, which are not available. If there had been any sound plan to substitute it would have been done long ago. The opposition has engaged in what is termed delaying tactics.

Mr. JONES. The Agriculture Department is not contending that they——

Mr. BREIDENTHAL. No, sir. I say, we place no blame on those other agencies for the delay.

Mr. SMITH. You are familiar with the argument presented on the floor of the House in opposition to an amendment presented to the civil functions appropriation bill?

Mr. BREIDENTHAL. During this session?

Mr. SMITH. At this session.

Mr. BREIDENTHAL. I am, sir.

Mr. SMITH. You understand that actually that argument is why there has been no appropriation for Tuttle Creek.

Mr. BREIDENTHAL. I understand and our committee went before the Senate Appropriations Committee and recommended that the appropriation for the local protection works at Kansas City be reduced in order to start this upstream control.

Mr. JONES. Was the opposition before the Senate Appropriations Committee?

Mr. BREIDENTHAL. Oh, yes. That idea did not prevail and the committee did not accept it. However, it would have started that project in 1949.

Now, on this dam Harlan County, Nebr., was substituted for the Milford Dam, although it does not serve the purpose of the Milford Dam and the Milford Dam is necessary also. That has been built and has been closed since the 1951 flood.

The effect of the Kanopolis Dam was not apparent on the Kaw River. It was intended to be. It did help minimize the loss of Salina, but the flood at Salina was caused by water on the local creeks plus the streams that enter the Smoky Hill River below Kanopolis. Kanopolis functioned perfectly during the last flood.

I would like to leave a copy of this editorial and I hope it will not cause any offense. I am doing it merely to show the members of this committee what the local feeling is. It is the thing that should be overcome.

I want to leave another editorial here.

Mr. JONES. Is the same opposition expressed to the Milford Reservoir?

Mr. BREIDENTHAL. Absolutely. However, the Kansas River report is kicking around here. I appeared before this committee when it was presided over by Congressman Will Whittington on that matter, but it has never been passed out or authorized by the committee. There is a bill in Congress now introduced by Congressman Scrivner to authorize those projects.

Mr. JONES. Is the same opposition apparent?

Mr. BREIDENTHAL. There will be, and there will be opposition before your whole committee.

Mr. JONES. They just do not want any dam.

Mr. BREIDENTHAL. They are organized to prevent the building of the dam.

Mr. JONES. Why?

Mr. BREIDENTHAL. Because it is an organization of landowners who do not want to submit to the acquisition of their land by the Federal Government for that purpose. You understand now they go around to the surrounding communities and do have some community support from the adjacent towns under the threat of a boycott of their towns with their business. The other is that they are going to lose some trade territory.

Mr. JONES. The documents referred to will be incorporated in the record, without objection.

(The documents referred to are as follows:)

[From the Kansas City Times (the Morning Kansas City Star), April 15

FLOOD BY ACTION OF CONGRESS

How much more will the Missouri Basin be required to stand?

For the second year in succession scores of millions of property are going by the flood route. Homes, factories, commercial buildings and other property crumble along the terrible path. Farther down the river the Omaha area makes preparations for the relentless river crest.

The upper Missouri is subjected to this devastation for one reason alone. The Congress of the United States whittled down the appropriations that could have delivered flood control in time. Congress saved nothing. It simply delayed the construction time on projects that it was already committed to build. And in the time lost by delays the flood came. Now the price of ruin is far greater than the money that could have delivered protection in time.

Last year the devastation struck the Kaw and Marais des Cygnes sections of the Missouri Basin and the waters rolled all the way down the lower Missouri. The fantastic cost of flood was greater than the cost of all the reservoirs and levees that could have prevented the major damage. For years Congress had stopped all progress by withholding funds, even on projects that it had previously approved.

And to this day there is no sign of awakened interest on Capitol Hill. Apparently aloof and disinterested the Congress of the United States has turned its back on the home front while it pours out the billions of tax money for projects around the world. It refuses even the few millions that could give hope of eventual protection.

The people of the American heart land watch the wrecked spectacle of preventable floods and wait helplessly for the next one to strike. They turn to the Government of the United States and find that officially floods don't exist.

Persons who go to Washington are amazed to discover that only a relatively few Congressmen have taken the trouble to study the problem. Men entrusted with making policies for the greatest Nation of the modern world pick up rumors, half truths and untruths to justify frivolous votes. Special interests are able to play their own games and further muddle the thinking of men elected to represent the national interest.

Here again is shocking proof of the cold fact that floods don't wait on surveys or congressional bickering. Here is a wretched spectacle of needless loss. From the Missouri Basin the second demonstration in 2 years lies before the Members of Congress. The only answer is an aggressive national policy to meet a national challenge.

[From the Engineering News-Record, November 29, 1951]

CONGRESS AND THE CORPS OF ENGINEERS

During the past few months no less than three congressional committee attacks and a critical book have been directed against the civil works activities of the Corp of Engineers. To none of them have the Army engineers seen fit to issue a public reply.

Silence in the face of these criticisms is not in the national interest, and is, moreover, damaging to the standing of the civil engineering profession. The fact that the criticisms are in many respects unfair and in others not factual makes the silent acceptance of them surprising as well as to be regretted.

If these criticisms are to go unanswered and a trend toward more such charges allowed to develop, it could eventually end in a separation of the Corps of Engineers from all civil works construction activities. Much as this might be welcomed in some quarters it would deprive the Nation of an organization and a procedure for dealing with emergencies and for integrating military and civilian construction activities that has proved its value and could hardly be replaced.

Also, making no reply to charges that the corps has cost the taxpayers $800 million on 182 flood-control projects because of "insufficient engineering planning and estimating" opens up speculation on the part of laymen as to whether civil engineers can estimate construction costs properly. This is damaging not only

to the capable men in the corps, both officers and civilians, but to the whole profession as well.

An entirely new attitude toward its relations with Congress would be a wholesome development in the Corps of Engineers—might, indeed, be welcomed by a majority of Congressmen. And greater independence in such matters as answering criticism is an obvious way to institute it.

An opportunity for asserting such independence is ready at hand in one of the current situations, for the Civil Functions Subcommittee of the House Appropriations Committee, which made the charge of "insufficient engineering," has refused to make public either its detailed report or the Chief of Engineers' reply. In the face of this impasse the Corps of Engineers should exercise enough control over its own documents to release them on its own say so and in its own defense.

Nor should this decision be affected by the fact that the charges against corps procedures have been referred to the House Public Works Committee. Perhaps if the Public Works Committee takes its assignment seriously—and produces its results for all to see—it may then be possible to deduce what was proper criticism and what was just anti-Corps of Engineers propaganda. Yet even then these deductions must be made on the relative credence assigned to the conclusions of opposing congressional factions. A forthright declaration by the Corps of Engineers itself on what is good and what needs improvement in its own procedures would do more to reassure the American taxpayer than any number of congressional reports.

There are good things that the Corps of Engineers can point to, and there are some changes that it could well recommend. It could, for example, reemphasize two items that were buried in one of its last year's reports: The $1 billion spent on flood control on the lower Mississippi has prevented flood damages totaling five times that amount; and the present benefit-cost ratio for all flood-control projects now in operation averages 1.96 compared with an original estimate of 1.5.

The Engineers could also document their claim, frequently made privately, that they report unfavorably on more projects asked by Congressmen than they approve. And they could point out that despite the vast sums of money that have passed through their hands, no engineer officer has ever been accused of misappropriating any of these funds for his own benefit. The latter is rather a proud statement to be able to make in this day and age.

Recommendations for changes would be more difficult for the Army engineers to make (but all the more effective for that reason) because they would frequently reflect on congressional practices. Yet the need for the changes is plain. There should be an end to preliminary benefit-cost estimates based on preliminary and necessarily incomplete engineering and economic studies. As a cure, Congress should provide more money and time for these studies.

On its part the corps should begin leaning over backward in fixing favorable ratios so long as these ratios are accepted as the prime proof of acceptability. If Congress wants to include "public necessity" or "social welfare" or "defense desirability" among the considerations that make a project worth while it can say so. But under the present rules of dollar benefits and dollar costs the Corps of Engineers should operate as the hard-boiled, realistic, unbiased, technical agency that it can easily be by virtue of its unique character and position. If it has to turn down three-quarters instead of only one-half of the proposed projects in order to be sound and realistic, that is the thing to do.

Were the Corps of Engineers thus to assert its independence and its devotion to the cause of efficient government and sound engineering it could speedily reverse a trend toward attacks that are whittling away its stature. Such a reversal would be good for the Nation and for the cause of engineering generally.

Mr. JONES. Is the same opposition registered in Topeka?

Mr. BREIDENTHAL. Those projects and the studies on them have not been completed. There are two reservoir projects in the Kansas River involved, that is, Milford and Perry Dams, plus local protection works in about a dozen communities.

Mr. JONES. The people who live in the Randolph Dam area would not object to them building dams up above them to keep the water off them, would they?

Mr. BREIDENTHAL. No. In their six alternate projects that was the purpose of it. We did not object to those studies.

Mr. JONES. It would be all right to build it above and protect the one below, but it would be bad to build it below if you took that land to help that fellow below.

Mr. BREIDENTHAL. If their land is taken I do not know what their interest would be in the other projects above.

Mr. JONES. Are they opposed to the agricultural program that would build small ponds on their lands? Do they object to the land for that purpose?

Mr. BREIDENTHAL. You mean above Tuttle Creek?

Mr. JONES. Anywhere in the area.

Mr. BREIDENTHAL. I think they are attempting to substitute that program for what you might term the large reservoir program that is essential in the protection of the lower valley. It is essential if you are going to give any protection to the larger streams on down, like the Missouri and the Mississippi.

Mr. JONES. They subscribe then to the theory that by a land-treatment program they can eliminate the flood conditions that prevail in that area?

Mr. BREIDENTHAL. In their area. Yes. In their area. And they advocate it as a degree of protection for the downstream floods. Yet I have failed to hear of one engineer who has endorsed that program as being a contribution to our problem sufficient to obviate the necessity of the larger reservoirs.

Mr. JONES. Let me see. The people down in the Trinity River watershed where a program was carried out——

Mr. BREIDENTHAL. Yes, sir. That is in Texas.

Mr. JONES. There was a need for the reservoir there and the farmers did not complain down there on the carrying out of that program.

Mr. BREIDENTHAL. No. As I said, the landowners in the Kanopolis Reservoir area were willing to sell.

Mr. JONES. They recognized it took a coordinated program down there to give the watershed protection.

Mr. BREIDENTHAL. This same group does not recognize their weakness in having proposed six different plans that took other people's land for their protection, and yet they protest against any of their land being taken for anyone's protection.

Mr. JONES. We are really at a loss as to how to proceed to have your cake and eat it, too. I do not know of any way to get it.

Mr. BREIDENTHAL. There is not any way to implement a program except to provide the money for the authority that is charged with the responsibility of developing that program.

Mr. JONES. It seems to me that the people in Kansas City and Topeka and the rest of those areas would have as much of a voice in their right to speak about what should be done as do those who are going to lose their land.

Mr. BREIDENTHAL. They are now unified through an organization known as Missouri-Arkansas Basins Flood Control Association and will be here to be heard, I think, on the 15th, when the Kansas River report will be up.

Mr. JONES. Do the people down at Lawrence, Kans., object to the construction of these dams?

Mr. BREIDENTHAL. No. They benefit from it.

Mr. JONES. Is there anything further you would like to add?

Mr. BREIDENTHAL. Well, I want to say this: I am back here at my own expense and because I have been working on this program for the last 18 years. I am as much disappointed as any of you gentlemen in the fact that it takes so long even after the authorization of a project to get it under construction. If there is any criticism of Congress I think that is the criticism.

I have a memorandum here that indicates there are 21 steps taken before a project becomes available for appropriation.

Mr. JONES. You have to go through some 35 agencies to handle it also.

Mr. BREIDENTHAL. You have opposition, and the same opposition and the same arguments, at every one of those steps. I do not know of any way to eliminate that unless you are going to put a stop-lock on it after a project has been engineered from the standpoint of the engineering feasibility and the economic justification of the project. If you are going to continue to have hearings and arguments pro and con on those considerations after they have once been passed by an authorized committee then I do not know where you are ever going to get to. You cannot eliminate these objections.

Mr. JONES. We are delighted to have had you here, Mr. Breidenthal.

We have one more witness, Mr. Dwight Payton, president of the Kansas Watersheds Association and editor of the Overbrook Citizen. We are delighted to hear you, Mr. Payton.

STATEMENT OF DWIGHT PAYTON, PRESIDENT, KANSAS WATERSHEDS ASSOCIATION, AND EDITOR, THE OVERBROOK CITIZEN

Mr. PAYTON. Thank you, gentlemen. I will forego reading any briefs, or anything else. I had not intended to testify, but I have so admired your conduct of this meeting and am so much in accord with the objectives that you seem so sincerely to have set up, that I thought it only fair that I give you the opportunity perhaps to question me.

Mr. JONES. I believe you testified down at Topeka, did you not, Mr. Payton? Were you there?

Mr. PAYTON. No. Not on that day. I perhaps am more of an authority on the confusion side of the picture, which you seem to be concerned with, and I also perhaps could be designated as leader of the opposition Mr. Breidenthal refers to. I will forego my text, and if I may make a few verbal comments, which might open up a few questions you would like to ask. I will try to keep it brief.

To come down to the crux of the matter as to what is the bone of contention, it is represented that the whole opposition is confined to the immediate reservoir area sites and the people within them. That is not true. I myself am more or less an example of that. My newspaper sits on the ridge pole of the watershed between the Marais des Cygnes and the Kaw. My interest in this is what is best for the national policy and I hope it is sincerely patriotic. I can say too that the situation is one wherein the great majority of farmers, for whatever reason it may be, have taken the stand in opposition to the big reservoir program. That is not just the position in the reservoir area.

Mr. Irving Boone, who is vice president of the Kansas Farm Bureau, and who attends most of the farm meetings in the State, recently esti-

mated only about 1 farmer out of 1,000 in Kansas favors the big-reservoir program. Whatever the answer is going to be, certainly that many people have to be considered and reckoned with.

Mr. JONES. Mr. Payton, let us go back to the point where you say one in a thousand farmers——

Mr. PAYTON. I said 1 out of 1,000 was his estimate.

Mr. JONES. Do the other 999 recognize the fact that you have a water volume out there of such tremendous proportions that it does damage of over a billion dollars and that it has to be corrected by a very sound and wise investment on the part of the Federal Government in order to contain the flood without injury and damage to property in the area?

Mr. PAYTON. Their basic consideration is the fact that——

Mr. JONES. What are the basic considerations?

Mr. PAYTON. Their reasoning, and I think the point of their reasoning is that the money would be better spent where the loss area is greatest.

Mr. JONES. Is what?

Mr. PAYTON. The money would be better spent where the loss area is greatest.

Mr. JONES. You do not subscribe to the theory then advanced by the proponents of land treatment of taking the water where it first falls and begin treating it there and then pursue it to its ultimate destination?

Mr. PAYTON. I think that is what your Kansas farm group would advocate. Yes.

Mr. JONES. Then where do they fail in their advocacy in going to its final conclusion? When it gets down to the proposition of impounding it then they lose their continuity of purpose.

Mr. PAYTON. That is one of the points of confusion you speak of. You have asked the question time and time again this morning as to whether the agencies have contributed to that. If I might give a rather blunt and brutal answer, I would say, definitely "Yes," on every point. I see no reason to be overly courteous or considerate. That is the case, and if you want to know about it I would be glad to give reference.

Mr. JONES. That is what we are here for. We would like to have that.

Mr. PAYTON. Let me run down a little list of points of confusion that will set the picture perhaps of what Kansas needs to do, and explain what must seem to you our obstreperous manner and actions back there. This is incidental, but it is still a point of confusion.

You mentioned that the Tennessee Valley has flood control. I am no authority on the Tennessee Valley Authority, but recently in the United States News and World Report——

Mr JONES. That was on the statement by General Pick?

Mr. PAYTON. Yes.

Mr. JONES. Let me get you straight.

Mr. PAYTON. I would be glad to get straight.

Mr. JONES. General Pick in making that statement failed to recognize the fact that the Corps of Engineers themselves made those plans. They came before Congress and they justified it on the basis of flood control. They called it flood control in 1927, 1928, 1929, 1930, 1931, and 1932. Now they say it is not flood control. Well, if it

is not flood control to the Chief of the Corps of Engineers then he has never proposed a flood-control project.

So let us get the record straight as far as flood control and the Engineers are concerned. What General Pick has to say about it is about as inconsistent as anything I have ever heard. So the corps ought to get the record and look at it as to what they testify on one occasion as against another.

So I say that General Pick's statement in the United States News and World Report as to what he considered TVA to be——

Mr. PAYTON. I did not offer that as an authority, but as indicative of why we are confused. It is that same technique.

Mr. JONES. I want to assure you of one thing. The people in the Tennessee Valley are not confused, regardless of what General Pick says about what the flood control act really is.

Mr. PAYTON. Of course, our relationship is distant and we only pick up communications and we can only trust what we read; but that is one point. Our agencies have misrepresented it in any number of ways.

Mr. JONES. Let me get back to this point and confine it to this area now rather than some broad question. We had Leslie Miller, the former Governor of Wyoming, here. Do you know him?

Mr. PAYTON. Yes, I know him.

Mr. JONES. He served as Chairman of the Hoover Commission Natural Resources Committee and turned out to be a great authority, and finally has been able to condemn every proposal and every activity of not only the Government agencies, but everybody else. So he has not been quite helpful. But we will confine it to that area.

Mr. PAYTON. Yes sir. I am content with that.

Mr. JONES. We are certainly vitally concerned because this is the most unique situation in the United States. Nowhere do we have conflicts like prevail out there.

Mr. PAYTON. One of our major conflicts, and Mr. Briedenthal mentioned it, is the effectiveness of the Soil Conservation Service program. That is one of the major points. We are led to believe from various suggestions that the watershed program utilizing soil conservation and the small detention dams is more effective than even the United States Soil Conservation Service will admit, like Mr. Peterson says.

Mr. SMITH. Who leads you to believe that?

Mr. JONES. Do you think the Department of Agriculture was restrained in their testimony before this committee?

Mr. PAYTON. What part of the Department of Agriculture do you refer to?

Mr. JONES. The Soil Conservation Service.

Mr. PAYTON. You are dealing with the Washington side of the Soil Conservation Service? The upper authority?

Mr. JONES. I am talking about what they testified here. Mr. Peterson says they were put under blankets when they were up here.

Mr. PAYTON. I would say from the local area side, which is the only place I can testify from with any authority, yes, they were restrained, and I have had evidence after evidence of it.

Mr. JONES. Give us some of that evidence.

Mr. PAYTON. For instance, I have been to practically every hearing on flood control since the 1951 flood. Kansas people have been greatly interested in the Washita project, which is the only large example——

Mr. JONES. What project?

Mr. PAYTON. The Washita in Oklahoma. Yet in all of those meetings, wherever agency men have been assembled, there has never once been a reference to Washita. We have wondered why and asked questions, and we have been evaded.

Mr. JONES. Let us go to the Washita area now and take that and examine it in the light of some of the statements you made. Nobody in the Washita area is opposing the construction of a reservoir dam by the Corps of Engineers in implementing the work carried on by the Soil Conservation Service.

Mr. PAYTON. That is not my understanding, sir. I met with Dick Vandermere and Dave somebody-or-other, and several of those Washita men only recently. I did not get that impression. I am sorry.

Mr. JONES. What about the people outside of that area? Are they concerned about it?

Mr. PAYTON. I am not familiar with the people. I am not active in promoting the Washita project. I only make the point there is a confused picture as to how effective that has been and I would like to know if it can be cleared up, and as to whether it possibly can be.

Here is another point. The House Agriculture Committee came by Topeka after your committee had been there and I, in my testimony presented this comparative set of figures in the variation that Peterson uses and which you have seen. Much to my surprise the members of the Agriculture Committee raised their eyebrows and said, "These are the facts we want to know and we could not get them on the Washita." For heaven's sake, why couldn't they get them? They are Congressmen.

Mr. JONES. They could not get the facts on the Washita?

Mr. PAYTON. Yes, sir. The Corps of Engineers made a survey and the figures tend to support the watershed idea.

Mr. JONES. Do you think the Soil Conservation people deliberately withheld information from the Agriculture people?

Mr. PAYTON. I have no other conclusion. There is no other conclusion to give. Why would they not be willing to talk about it? I do not know. But you were asking those questions and that is the frank and brutal answer. I do not want to offend anyone.

Mr. JONES. We are not offended in the least.

Mr. PAYTON. That sets one picture.

Mr. CURRAN. That tabulation you mentioned I assume is the one that compares 1 dam of the Corps of Engineers with 34 of the Soil Conservation Service, with a cost of $6,000,000 for the engineers and I believe it is $1,983,000 for the Soil Conservation Service.

Mr. PAYTON. I believe that is right.

Mr. CURRAN. Who prepared that statement? Do you know? Where did that originate?

Mr. PAYTON. It came out of the agency files.

Mr. CURRAN. Was it made by the agency?

Mr. PAYTON. Yes.

Mr. CURRAN. Does it give the whole story? The reason I ask that question is there is no figure there to indicate what the relative dollar value benefits of the two plans are. Does it say the two proposals were intended to accomplish the same purpose? Do you have anything on that? I am quite interested in that tabulation.

Mr. PAYTON. Frankly, I cannot claim authority for that. I would rather you seek that at a point where the authority is. I have only opinion and hearsay.

Mr. JONES. Out of those statements and the suspicion that the Department of Agriculture has not presented the facts, is that what leads you to believe that they could carry out a program out there in such a fashion as to take care of the water?

Mr. PAYTON. That is a part of it. I visited the Muskingum Valley and spent a considerable time there looking it over, and have spent considerable research on the whole thing, and the whole picture does convince me of it.

Mr. JONES. Such as a flood or the rainfall that fell in that area, which at one point was approximately 520,000 cubic feet per second, and you believe that a land treatment program could have utilized all of that water without contributing to floods?

Mr. PAYTON. You cannot say all of the water. No system would have taken care of all the water.

Mr. JONES. Where is the point where you are going to get away from it?

Mr. PAYTON. The point of protection, I imagine, would be to protect the upland people as much as possible and keep the water in dikes through the cities. Beyond that you still have a flood and you have some areas that are not diked where you will have floods.

We make one mistake in Kansas in trying to talk about a total flood control. I think that would be thoroughly horrifying, not to say unfeasible. That is another point of confusion. Why is it not defined as to what would be the sensible point of control that would justify it economically?

Mr. JONES. You see, the thing that has given rise to my thinking is that contention that there be extended in that area a new engineering concept which has never been subscribed to by any competent engineer in all the world, I doubt, that we know anything about.

Mr. PAYTON. I can cite you two.

Mr. JONES. We are talking about a tremendous area in which you are going to eliminate flood hazards. Yet here is a concept that goes beyond anything that even the Department of Agriculture says is not feasible and the Corps of Engineers says is not feasible and the Department of Interior and their engineering people say is not feasible. I cannot for the life of me see where we get this basic ideology we are talking about.

Mr. PAYTON. If I might be a little blunt again, the Kansas people from what they have seen of the agencies have more or less lost faith in the statements of the agencies.

Mr. JONES. Of the Government?

Mr. PAYTON. Not the Government. They are not the Government. They are instruments of you folks, who are our representatives.

Mr. SMITH. You say you can cite two engineers. I have never checked all the records of all the engineers in the world, and I would not say that any one of them would take either side here, but what are the engineering sources you quoted as accepting your viewpoint?

Mr. PAYTON. The two hydraulic engineers of our two leading universities, Kansas State College and Kansas University, Prof. Hilary of Kansas State and Prof. J. A. Johnson of Kansas University, both

condemn the big-dam system as against the watershed. If our two leading university engineers are foolish to that extent we should change them, certainly. Otherwise I say they have authority, and again we are confused.

Mr. JONES. Do they say you can do one without the execution of the other?

Mr. PAYTON. Absolutely. I think Mr. Breidenthal heard them say that, and so has Mr. Stockwell.

Mr. JONES. And the successful operation of flood control works out there?

Mr. PAYTON. Within the limits of economic justification and feasibility. Yes. They say that.

Mr. SMITH. Let me follow your suggestion of extending flood control within the limits of economic justification. Just in broad terms that a layman can understand, where would you say you should stop having any flood control?

Mr. PAYTON. Those are the only terms I told you, sir, and you will have to interpret it maybe technically, but the informed opinion in Kansas, and even our Governor subscribes to the theory, is that you have to consider all factors, and even zoning would become an important factor. After all, when you establish a reservoir you are zoning. You are zoning all of the people out of an area. Why would it not be practicable to design it and say, "Here is an area that is too thinly populated, so let us zone them out."

We can protect the Kansas City bottoms and we should, but there are great stretches we cannot protect, and there may be parts of the Kansas City river bottom that are highly industrialized. Those factors are not being considered and that is why we are a little distrustful of the agencies.

Mr. JONES. You talked about the economic justification of these programs. You say the Soil Conservation Service according to Dr. Jones and the other professor out there who is an engineer says it can be done justifiably in carrying out soil conservation. What do those works embrace in the way of soil conservation?

Mr. PAYTON. Of course, I am a newspaper farmer, but my understanding is that it starts with good soil conservation practices, which puts more absorption in the soil. Your second step is terracing, which does make the initial retardation, and some improvement——

Mr. JONES. Let us take terracing, for instance.

Mr. PAYTON. All right.

Mr. JONES. What part of the terracing work will you pay for as a farmer, and what part will the Federal Government pay for?

Mr. PAYTON. I can go on record very flatly on that, that my desire would be for myself and my neighbors to pay for all of it there.

Mr. JONES. Then you will not have the Soil Conservation Service rendering anything but a technical service to you.

Mr. PAYTON. Here is the peculiar thing you run up against. The Soil Conservation Service and the Corps of Engineers can only economically justify these things and show where there is great benefit.

Mr. JONES. Based on increased production.

Mr. PAYTON. But the individuals themselves who own the property will not pay the costs in view of the benefits. Why is that? You see what I mean. That is what makes me distrustful of some of these benefit figures to some extent.

Mr. SMITH. To accomplish this flood control through the so-called soil conservation method you have to have some program in order to accomplish it.

Mr. PAYTON. The thing is so terrifically complicated and vast that there is no single thing you are going to be able to point at and say that is it.

Mr. SMITH. You could not base your soil conservation program on a voluntary standpoint if you are going to use it for flood control for the whole Kansas River Valley.

Mr. PAYTON. Well, you put in a second supplementary statement there that nullifies the first.

Mr. SMITH. Is it not the contention of the Blue River people that their program as opposed to the big dams will provide the same protection that the big dams provide?

Mr. PAYTON. Yes. I think they do claim that.

Mr. SMITH. In other words, they claim they are going to have flood-control protection for the Kansas River, do they not?

Mr. PAYTON. Here is the cost comparison. The Federal Government would pay for the entire cost of the Tuttle Creek Dam installation, which would protect Kansas City, Lawrence and Salina.

Mr. JONES. We are not talking about Tuttle Creek.

Mr. PAYTON. To show the comparison of what the people should stand. On that consideration it would be equally justified then for the Federal Government to pay the entire cost of another comparable program that would do the same job. Right?

Mr. SMITH. Yes.

Mr. PAYTON. That is another point of confusion. Personally the only pattern I can make out of it is that if we are going to keep local control and get a sound program it is going to have to allow for more initiative on the local level and you would have to have each organization on its own with its own free will, and the Federal participation would be somewhat on the order of our highway systems the way they are now installed.

Mr. SMITH. Let us get back to this. I understand the theory, but still, do not the people of the Blue River area contend that their plan would offer protection to the Kansas River Valley?

Mr. PAYTON. I think they do. Yes, sir. I am inclined to believe it too, sir.

Mr. SMITH. In other words, if their plan would be used in opposition to the Tuttle Creek plan then both sides accept the idea you have to give flood protection to the Kansas City area.

Mr. PAYTON. I think anybody has to consider that if we are going to have a national flood-control policy, you certainly have to consider protection up and downstream. Yes.

Mr. SMITH. In other words, if you adopt this soil-conservation plan each landowner in the affected area has to participate.

Mr. PAYTON. Right.

Mr. SMITH. In other words, it has to be compulsory.

Mr. PAYTON. It is not compulsory under your present law.

Mr. SMITH. I am not talking about present law. In other words, to make that plan work out there it would have to be compulsory. It could not work unless everybody participated.

Mr. PAYTON. It could work out with an 80 percent participation. I think you will get maximum results up to 80 percent. You may bypass a few people, but it would not be enough to hurt the whole program.

Mr. SMITH. Would you not have to put it in whatever law or regulation it was, or whatever you acted upon, that you have to have enough participation to provide the equivalent benefits?

Mr. PAYTON. That is already in the law, I believe.

Mr. SMITH. You are talking about the general soil-control law?

Mr. PAYTON. No. The Flood Control Act. It provides you have to have an 80 percent Soil Conservation Service write-up before you are eligible for the water control treatment program.

Mr. SMITH. But under that Soil Conservation Service program there is no follow-through if the land changes ownership. There is no protective system. That is one difficulty, as far as I know, of having a system to provide flood protection for an area.

Mr. PAYTON. I see what you mean. Certainly that is one of the problems.

Mr. SMITH. You have to have some compulsory regulation there that you do not have now. Do you not concede that, sir?

Mr. PAYTON. If we grant State legislation granting the right of eminent domain, as they have in Muskingum, Ohio, you would have compulsion. But you have to have domain where it is local. That is where I like to have domain.

Mr. SMITH. I agree you have to work out individual conflicts on their individual basis in any type of program.

Mr. PAYTON. Yes.

Mr. SMITH. But considering this valley-protection idea you have, if you were to give more local control, for instance, if we decided we must let you people out there in the Kansas River Basin attend to your own problem entirely, and you all agree as to what is the best program, with the Federal Government contributing only to the extent it is contributing now in the soil-conservation program, or perhaps in relation to the benefits below that area that get flood control, that this would be the only contribution the Federal Government would make; and in the decision as to who would handle what, action would have to be taken on a democratic basis, would it not? All the people out there in the area would have to have a voice in it.

Mr. PAYTON. You would have basin municipalities set up for the express purpose of maintenance and control. Yes.

Mr. SMITH. In other words, the people in the Kansas Citys would have as much voice in it as somebody living in Randolph, Kans.

Mr. PAYTON. Not that they would be within the confines of your municipalities and unit basins.

Mr. SMITH. The whole idea, as you mentioned it, is to give basin protection. The people in Kansas City live within the basin of the Kansas River.

Mr. PAYTON. You have basins within basins, and that is where we are talking about different things. You are talking about total basins. In Kansas we have what we call the upper Marais des Cygnes Basin and the Osage Basin. The Blue River is a basin but it is also part of the Kaw Basin.

Mr. SMITH. The Blue River goes into the Kaw?

Mr. PAYTON. Yes.

Mr. SMITH. You cannot have any program in the Blue River that does not have some effect on the Kansas, could you?

Mr. PAYTON. I would contend, sir, that an effective flood-control program could be undertaken in the Blue Valley, for instance, that would protect it from flooding.

Mr. SMITH. Protect the Blue River?

Mr. PAYTON. Protect against any flood. Kansas City would get an equal benefit. I cannot see any other benefit than that.

I might say that is another point of confusion. The Soil Conservation Service comes into our State and says, "Yes, we can see a watershed is effective within the tributary but will have no appreciable effect on the main stream." Brother, that confuses me. How can you possibly effect flood control on a tributary without affecting the main stream?

Mr. SMITH. It will have some effect, but "appreciable" is the word there. You can so fix it that your creek will not overflow, but perhaps the water of the creek will be at such a high velocity and volume when it gets down to the main river that the river cannot carry it.

Mr. PAYTON. To get back to the matter of degree, if you have controlled that creek from flooding you may have set a higher degree of flood control than you would in letting a greater creek rush down behind the reservoir. It is not a simple problem.

Mr. JONES. Did I understand you to say you have visited Muskingum?

Mr. PAYTON. Yes.

Mr. JONES. Was that not a demonstration to you of just what the Soil Conservation Service said to you out there?

Mr. PAYTON. May I comment on the Muskingum?

Mr. JONES. Yes.

Mr. PAYTON. To me primarily the Muskingum is a brilliant demonstration of what can be done within a single basin by planning that basin as a total unit. That is what Muskingum did. The locality surveyed and alined the whole area, watershed and main streams, as a total unit. We are not getting that type of planning within our Young plan and Pick-Sloan plan.

Mr. JONES. But we are getting total planning in all those basins out there.

Mr. PAYTON. Do you want me to explain why I think not?

Mr. JONES. I can understand you are just basically opposed to dams.

Mr. PAYTON. No, I am not, sir. Here is my opposition, and it is based on the Salt-Wahoo formula, which you have heard. If I were going to plan improvement after improvement and if I made a start at the head of the stream——

Mr. JONES. Why can you not think of both of them working together instead of just one and that being the only one, and thinking that your plan has to be the one?

Mr. PAYTON. Total basin coordinated planning is my answer, but I deny stanchly that we have that in Kansas, and I think I can offer proof beyond doubt that we do not have, and you gentlemen will consider what to do about the agencies.

Mr. SMITH. Let us get back to the lack of coordination out there.

Mr. PAYTON. The picture is not a very pretty one, really. I can cite you this to show the utter lack of coordination. The Corps of

Engineers in their meetings along in last fall were getting up and making statements to the effect that soil conservation flood control would only be 6 percent effective. That is a Soil Conservation Service figure, I concede, but they deliberately ignored the part played by detention dams and thus by omission misrepresented it. I finally challenged them, and Mr. Ben Orban at Kansas City, to get up and speak to our public about it, in a public debate. The public has not had a chance to get the answers because Mr. Orban would not debate.

You say your people are giving the answers. It is a democratic process. If we are confused it is our prerogative and even our duty to argue and discuss and debate until we can effect a compromise and then come back to Washington; but we have not done that. There have been only two meetings in Kansas.

Mr. JONES. Do you not think the people of Alabama have some interest in what goes on out there insofar as the Federal Government and its Constitutional right to look into the affairs of Federal property out there is concerned?

Mr. PAYTON. Certainly. We use part of your tax money and you use part of ours.

Mr. JONES. That is right.

Mr. PAYTON. What is your point?

Mr. JONES. We are talking about the democratic processes developing out there and it is nothing but a debating society. We are trying to get the work done, and we have been since 1936.

Mr. PAYTON. I do not think anybody is denying you any right at all if anyone wants to come to us in Kansas and offer some advice.

Mr. JONES. I am talking about the Congress itself taking some affirmative action to get something accomplished in the way of flood control so that you will not have these recurring floods that will require Federal money to be spent for rehabilitation and so on.

Mr. PAYTON. I certainly did not mean to imply Congress should have no interest. I merely meant we should come to Congress with something concrete to operate on. So far, you know, you are blocked by opposition of this group to that, and certainly the opposition is still there. Why in heaven's name are we not sensible enough and American enough to get together and stay together until our engineers or we think we can come to Washington and say, "Here, sir, we would appreciate it very much if you would give us some assistance on flood control on this basis." I told that to Mr. Breidenthal, but you would be amazed at the unwillingness of the Pick-Sloan camp in some places—and I do not refer to Mr. Breidenthal in this case—to refuse even to sit down and talk.

I have an example of that in Ottawa. I am in the Marais des Cygnes Basin. The Ottawa people want the Pick-Sloan plan and the Marais des Cygnes Basin set up as a watershed. I have pleaded with the businessmen of Ottawa to get together and sit down and talk this over and, brother, they will not even consider it. They say Pick-Sloan and the Corps of Engineers—and again you have confusion.

Mr. JONES. Would your group be willing to employ the services of competent engineers and have them make an inspection of various proposals out there and agree with their findings?

Mr. PAYTON. Perhaps they would see it a little differently. We have a definite proposal in the Kansas watershed and if we can raise

the money, if Mr. Breidenthal would help us, I think a meeting has been held and they would come together to effect such an economic and engineering survey within what we would term a reasonable basis. Once that is done I do not know how anybody can stand up and say, "We will not have it" any longer. Certainly I will not stand up against it.

Mr. JONES. You have to admit the preponderance of engineering minds do no concur in your position.

Mr. PAYTON. Well, you will have to admit, on the other hand, that numbers do not make right, sir. There is a possibility that we are still right.

Mr. SMITH. While you are out there arguing and maybe trying to come to some decision as to how to go about what can be done or what should be done to satisfy everybody, do you think it proper to confine action to one small basin—and I think you want to go even smaller than the Blue, do you not?

Mr. PAYTON. Yes.

Mr. SMITH. While you are getting around to doing something on this tributary of the Blue, are not the people who live on the Blue and Kansas and Missouri and Mississippi going to suffer from the delay?

Mr. PAYTON. Perhaps so, sir, but until somebody is satisfied the right answers have been reached, can we move ahead on a national scale. That is what you are trying to do now. I think it is a good thing and it has to be done. Perhaps we can afford the delay.

Mr. JONES. You would agree with any kind of program that will go out there and work on floods providing, of course, it does not take the people's lands. Is that not about the whole thing?

Mr. PAYTON. I did not get that.

Mr. JONES. I say, you will agree to any kind of program to provide flood control if they do not take anybody's land.

Mr. PAYTON. I have no interest in whether people's lands have to be taken. I can even see justification for the few giving that to the many. I have no land. Mr. Stockwell is a good friend of mine, but on the other hand, I hope Mr. Breidenthal is a good friend of mine also.

Mr. JONES. I am talking about those who support your position.

Mr. PAYTON. I do not believe you will find that feeling at all. I think you would find an expectation that land would have to be inundated. There is a preference that it be farther up the valley in the less valuable land, which makes sense. That is the system Muskingum followed. They did not go into the mouths of the streams, but up into the marginal areas.

Mr. JONES. Do you think we ought to have some concern about the water flow where these dams are needed, with respect to the flow of water and the volume of water passing through the main stem?

Mr. PAYTON. If you prevent that flow from forming then you do not need to have concern about it. There is a difference between flood prevention and flood control. Once it is a flood it is established per se. It is beyond control. You can prevent it in the watershed by retarding it.

Mr. JONES. Let us go back on this retarding proposition. There are physical laws you have to look into. How are you going to keep all that water on the land that fell there in certain areas?

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Mr. PAYTON. Of course, I am not going to say I am an engineer. I am trying to understand the thing. I believe the layman is obligated to try to understand the experts, and I believe the experts should be under the control of the broad jurisdiction of the layman's views; but I would say this: It seems sensible that a flood depends on the speed with which water gets to the main stream. If you can reduce that speed and give your main stream channel a little additional time for clearance you will not have a flood.

Mr. JONES. But you cannot consider that from the standpoint of the water.

Mr. PAYTON. If it does not reach flood peak you do not have a flood.

Mr. JONES. Let us go back and take it on the land and see what we are going to do with it.

Mr. PAYTON. I can give you an illustration. One of the best little examples of watershed engineering——

Mr. JONES. Give us some reasoning as to how you can check the water flow on the land by water retardation when you have 18 inches that fell on the land and the ground got wet and the water started to flow. How will you keep that water on the land?

Mr. PAYTON. You start out by holding it in the reservoir of the soil—permanently holding it.

Mr. JONES. Do you think you can keep 18 inches there?

Mr. PAYTON. No, I did not say that. I said you make a start there. You take up some of the water. That some might be the crest. Then you have retarding structures in the gullies and draws which are dams with flood control reservoir capacity that are engineered to draw down over a designed period of time. It can be 1 to 3 days, or a week. If you multiply that I do not see why you do not get total flood control the same as with one big one.

Mr. JONES. Why not put so many buckets out there and put them on the ground and then let the water out of them when you want to? Is that not about as practical a thing as stopping 18 inches of rainfall that way in a short period of time? Your hypothesis is just about as practical as the buckets would be.

Mr. PAYTON. I do not mean to be facetious but I would point out there are vast benefits from holding water upland.

Mr. JONES. We recognize that and want to put it in operation, but we know one is not going to do the job without the other. That is what we have been contending all the time in this committee. The reason why we authorized the project is that it is going to take both programs to get it done. When we are talking about a flood like that which occurred in 1951 and you talk about keeping it all on the land, it is just like talking about shooting the moon. It cannot be done. There is no engineer in the world who can come out and say you are going to have flood control in that area that way.

Mr. SMITH. On this point of flood control, you mentioned a minute ago there is no such thing as flood control.

Mr. PAYTON. I say the semantics of the word would imply a flood is a flood. When you speak of a flood and speak of control you have to admit you have a flood.

Mr. SMITH. Let us go back to the flood control and water control. Along the Mississippi River 30 years ago the volume of water in the river reached a certain stage and spread out over the lower lands and

all through the Mississippi Valley. If an effort has been made through a combination of retention dams upstream on the tributaries and levees along the main river in the past 30 years and this water has been confined within the bed of the stream and between the levees, is that not a control that you can see a benefit from?

Mr. PAYTON. Yes, sir; but I might point out in that confining process you are creating more floods upstream by heightening your river.

Mr. SMITH. Your velocity of the flow is increased during all that period. Perhaps on some of the tributaries where they flow in there has been an immediate backlog, but if you will check the history of that period the water has flowed through the river faster than it did before. In other words, it is getting out into the ocean quicker. It seems to me it ought to be delaying floods or helping to prevent floods upstream.

Mr. PAYTON. I certainly have no case to make against dikes. I think that is probably the starting point of protection in the local city area or down on the Blue River. I am not an authority on dikes and do not see what you are trying to get at.

Mr. SMITH. The point is, if a certain volume of water can be controlled then what would be a flood one time does not become a flood because you set up some control features.

Mr. PAYTON. You are attacking my semantics. Let me refer back to your statement, Mr. Chairman, that you and I come out with the same conclusion there. You grant a right that a start could be made in the watershed. I grant the right that a supplementary water reservoir would be necessary. Again I refer you to the attempted coordination on the Salt-Wahoo, which has not gone through. That is the only sensible compromise. We can talk all day on all phases of this, but you always come back to that point. The public wants to be sure that there has been an honest coordination and the upland lands have been taken into consideration in the size of the main stream reservoir. That is what has not been done in Kansas, and that is another point of confusion.

Mr. JONES. It looks like the debate will continue on into infinity.

Mr. PAYTON. I again want to express my appreciation to the committee. I think this is a great thing for Kansas that has happened. I know you are getting some valuable information and are going to do a terrific job.

Mr. JONES. Thank you.

Mr. Doughton is here from North Carolina. I am going to ask him to come forward. We are glad to have you, Mr. Doughton. I am sorry we are running a little bit behind schedule this morning.

STATEMENT OF HON. ROBERT L. DOUGHTON, MEMBER OF CONGRESS FROM THE NINTH CONGRESSIONAL DISTRICT OF NORTH CAROLINA

Mr. DOUGHTON. I appreciate very much your affording us an opportunity to appear here this morning in the interests of what we consider a very important and vital matter, especially as it relates to soil conservation and flood control, two subjects in my opinion which are very closely related, if not analogous, and which are inseparable. I do not think you can have a sound policy of flood control without some soil conservation, and vice versa.

The consideration for the request I made to Mr. Curran, your staff Director, for appearing here this morning, was that the president and other officials of the Yadkin Valley Soil Conservation Association might appear and discuss this problem briefly. We appreciate that very much.

Therefore, to avoid any repetition or duplication of testimony I shall present as the first witness James T. Graham, president of this association. Mr. Graham is a large-scale farmer and a man of wide experience in public matters. He is a member of the board of county commissioners in his county and has been for a number of years, and possesses in my opinion as full and compelte a knowledge and understanding of this subject that he wishes to discuss as any man in North Carolina or possibly elsewhere. So I take pleasure in presenting Mr. James T. Graham, president of the Yadkin Valley Soil Conservation Association.

Mr. JONES. We are delighted to have you, sir. Come around, Mr. Graham. You may stand or sit, whichever you would like.

STATEMENT OF JAMES T. GRAHAM, PRESIDENT, YADKIN VALLEY CONSERVATION AND FLOOD CONTROL ASSOCIATION

Mr. GRAHAM. All right. First of all, I will say I am glad to be here, and especially glad to meet you and the other members of the committee.

Mr. JONES. Would you like to read your statement?

Mr. GRAHAM. Yes; I would.

The Yadkin Valley Conservation and Flood Control Association consists of soil conservation district supervisors, landowners, and other public-spirited individuals who are interested in the development and conservation of our natural resources. As president of the association I have followed with interest the flood-control survey made by the Department of Agriculture on the Pee Dee River watershed above Rockingham, N. C.

For your information, gentlemen, it is rather unusual and confusing to you all that at the upper end of this watershed it is the Yadkin and when it gets down to a certain portion of the State they change its name to the Pee Dee River.

Mr. JONES. That report is now pending before the committee. It came in last week.

Mr. GRAHAM. That is right. The thing I wanted to point out, Mr. Chairman, is that the Yadkin River and the Pee Dee River are all the same river.

Numerous meetings have been held at which landowners, district supervisors, and representatives of various business and professional interests were informed of the proposed program as presented in the Interim Survey Report. Subsequently, copies of the report were made available for review by the district supervisors and the representatives of the Yadkin Valley Conservation and Flood Control Association. We find that the recommendations as to changes in land use are based on land capabilities and that each acre is to be treated according to its needs.

There are approximately 284,000 acres of land in the watershed subject to damage by floodwaters, of which 236,000 acres will be benefited if the remedial measures are applied.

At present there is an average annual loss of 138 acres of flood-plain land due to land scour, 160 acres lost as a result of sand deposits on fertile bottom lands, and 198 acres lost from swamping. It is estimated that approximately 81,000 acres of flood-plain lands will be enhanced in value as a result of the proposed remedial program. Likewise the damage now sustained by 11,250 miles of roads and railroads will be reduced more than 62 percent.

The report recommends that a program of runoff and waterflow retardation and soil erosion prevention be installed during a 20-year period at estimated cost of $15½ million to the Federal Government, and $7½ million or its equivalent to private interests.

The recommended program has as its objectives the reduction of floodwater and sediment damage and the conservation of soil and water resources. The interdependent measures that will accomplish this objective are as follows: Subwatershed waterways, gully stabilizaton and sediment control, erosion control along roads and railroads, terracing, field borders, farm waterways, farm land drainage, woodland impovement and management, tree planting, adequate fire control, torrent control, land acquisition, tributary channel improvement and other soil and water conservation practices and measures applied in proper combination with measures listed above to complete a basic system of soil and water conservation in accordance with the needs and capabilities of the land of the watershed.

It is estimated that the recommended program will yield an average annual flood-control benefit of $1,542,000. In addition to this flood-control benefit an estimated average annual benefit of $9,910,600 from erosion control, conservation farming and woodland management will accrue to private owners and operators of farm land and timber land, to railroads and highways, and to the public, on lands to be acquired for watershed protection.

The ratio of the estimated average annual value of the total benefit ($8,667,000) to the average annual value of the total cost ($1,516,000) of the recommended program is 5.7 to 1 (comparison of benefits and costs based on future intermediate price levels). In other words, for every dollar spent it is estimated that $5.70 will be realized in benefits.

I would like to add this verbal statement: That the Yakdin River heads up at the mountain section of North Carolina, which is about 50 miles northwest of Congressman Doughton's home. It flows through 17 counties, affecting 3 congressional districts here in Congress. This is the first program that I know anything about or I have heard anybody else say that it meets with the approval of and is in accord with the thinking of the leaders of that section.

In Salisbury, N. C., my county seat, a few weeks ago we had a meeting of the executive committee, which Mr. German will explain. The members of that committee were all in accord with the program and voted unanimously to get it into operation as soon as possible. It is the report or estimate of the technicians and the engineers to your committee, or whoever is the proper authority, that $68,000 would get this program started. We are here to offer you our cooperation. We are not trying to cover up anybody.

Mr. JONES. You are not having any fight?

Mr. GRAHAM. We are not having any fight.

Mr. JONES That is the kind of program that can be carried out. I do not think you will experience the difficulty we have had in laboring with some others.

Mr. GRAHAM. Yes, sir. I feel that myself and I am satisfied that our bosom friend, Mr. Doughton, can bear me out on that statement. There have been some programs mentioned in days gone by where it would affect the thing, and I listened with a great deal of interest to the thing you referred to with the other gentlemen; but I would like to add that it goes over about 150 miles, according to Mr. Brown, which will be the length of the stream, of the actual Pee Dee River down to Rockingham, N. C.

I know every man who comes before you thinks his program is the best program, or else he would not have come to you. I have served on a much smaller committee than this, but I realize people who testify feel that way about it, but I think Congressman Doughton knows everybody in North Carolina would agree with what I said, that this watershed goes through about the best-balanced section of the State. What I mean by that is that with all these 18 counties affected they are well balanced from the standpoint of agriculture and industry.

We have suffered somewhat in days gone by by being unable to control this flood danger. In Rowan County, where I live, our trouble, Mr. Chairman, is on the larger tributaries of the Yadkin River that overflow and are now damaging us some. If this program goes into effect it will certainly eliminate that terrific danger.

Our remarks are brief and we appreciate your having given us this much of your time. We want to assure you we are satisfied with telling you the truth when we say our program does meet with the approval of the people, both industry and farmers, and many are interested in both.

There are some sections where maybe one or two medium-sized manufacturing towns are located where they would like to have a dam that would cover a large area of farm land that would maybe benefit them, but they have all come to realize that this is about the best program we could arrive at.

For your information I would like to say that the two counties which I am almost living in—I live on the county line—have a special act of the legislature which is a local measure to help maintain this program once it gets into effect. It is a three-man board. I happen to be a member of that committee. We would have the right to levy a local tax to keep prepared to maintain whatever is worked out in this program. It is the intention of the other leaders of the other 15 counties to sponsor the same legislation with representatives of their counties at the next session of the Legislature of North Carolina.

I appreciate your time and would like to yield to the vice president, Mr. German, who is also a businessman and landowner in this same watershed.

Mr. DOUGHTON. Now, Mr. Chairman, we have another gentleman here from my district, a very prominent businessman and a man very familiar with this problem and subject. He is vice chairman of this Yadkin Valley Soil Conservation Association and I wish you could hear him briefly. Mr. F. L. German.

Both of these men are from the district I represent. There are no two more outstanding men than the gentlemen who are here this morning.

Mr. F. L. German, vice president of this association.

Mr. JONES. Would you like to sit down, Mr. German?

STATEMENT OF F. L. GERMAN, VICE PRESIDENT, YADKIN VALLEY CONSERVATION AND FLOOD CONTROL ASSOCIATION

Mr. GERMAN. Thank you, sir.

Mr. JONES. Would you state your name for the record, please?

Mr. GERMAN. F. L. German.

Mr. JONES. Where is your home, Mr. German?

Mr. GERMAN. Lenoir, N. C., upon the headwaters of the Yadkin River, I might say.

I would just like to say briefly that I concur in everything that my fellow sponsor here has told you and I would like to say too that our one hope in this program which we feel pretty strongly about and which the people we represent feel strongly, too, is that we would like to have some small beginning of it. It has been under consideration since the thirties up at the upper reaches of the river basin, that is to say, the Yadkin Valley. It has gotten to the place where every so often we do have a major flood. The floods do not come often enough but what the people come back down in the valley and do their building and investing, and then it literally wipes out towns and properties again.

We have a peculiar situation in this matter. In the upper section the runoff is terrific. We have comparatively narrow bottom lands which are the only things we can farm there. The rest of it is steep hillsides and the timber has been cut off pretty much and it has a tendency to rush down into these valleys and flood them from hill to hill. When these West Indies floods come they only come in the fall, and that every several years, but after it has gone down through a few counties it levels off and spreads out and finally goes to where the land has to be dredged and where the dredging has to be carried on to make the land productive.

This program which you have before you and which we know about in detail we will not take your time on in discussing. We feel very strongly it conserves the water flow from the upper reaches, where there is more rainfall. It will stop the runoff and it will save the silting up and filling up of this program you mentioned, which has already been dredged considerably and on which great expense has been made, and a great result has been gotten from. It will at the same time sell our people by a small beginning. It will not only sell them, but help them to help themselves. Our program is a cooperating program. The people will get the idea we think and we feel sure they will spend a great deal of their own time and energy and money. It is cooperating with all the various agencies, forestry and so on, of each county and the Department of Agriculture. It works out into what we think is an ideal set-up for eliminating the flood trouble there in western North Carolina.

I just would like to say we appreciate the consideration you gentlemen have shown us and the courtesy you gave us. We hope we can get a beginning and then the future will determine what the outcome will be. We do not ask for much. As you know, it is very, very modest.

Thank you, sir.

Mr. JONES. It was nice to have you, sir.

Mr. DOUGHTON. Thank you very much, Mr. Chairman.

Mr. JONES. Yes, sir. We were delighted to have you and both of your very fine witnesses.

Mr. DOUGHTON. Thank you and your subcommittee very kindly.

Mr. JONES. Mr. Doughton, the report on the Yadkin-Pee Dee River has now been transmitted from the Department of Agriculture and is now in the hands of the printer and will be transmitted to this committee as soon as it is printed.

Mr. DOUGHTON. I am sure you realize the great importance of this, and if there is any way I can cooperate in helping you to carry on what you have in mind I want you to know I will be glad to cooperate in any way I can. It is of very deep concern and vital to us all. I am sure we all have the same objective in view and purpose in mind, and I would be glad to talk to you about it later.

Thank you all very much.

Mr. JONES. Thank you, sir. We have several statements here that have been submitted with the request that they be included as a part of the record. Without objection that will be done.

(The documents referred to are as follows:)

THE NATIONAL ASSOCIATION OF SOIL CONSERVATION DISTRICTS,
Honey Creek, Iowa, April 29, 1952.

Hon. ROBERT E. JONES,
Chairman, Subcommittee To Study Civil Works,
Washington, D. C.:

Mr. Chairman and members of the committee, my name is Don Anderson. I am a farmer. I live in western Iowa in Pottawattamie County. I operate a 640-acre livestock and grain farm. I helped organize and was a member of the district governing body of the West Pottawattamie Soil Conservation District, from 1944 to 1952. During that time I also served as president of the Iowa Association of Soil Conservation District Commissioners, and a director of the National Association of Soil Conservation Districts, representing the upper Mississippi Valley region.

I am making this statement as chairman of the community watersheds committee, and I offer the report of the community watersheds committee as adopted by the National Association of Soil Conservation Districts' convention, February 27, 1952, as part of the records of this committee hearing.

REPORT OF COMMUNITY WATERSHEDS COMMITTEE MEETING FEBRUARY 27, 1952, AT CLEVELAND, OHIO

This committee confirms the past policy of the NASCD as follows:

1. Urge the planning of Federal, State, local and other-water-use and control programs and contributions on the basis of watersheds or basins including:

(*a*) Land treatment fitted to the area.

(*b*) Stabilization of subwaterways, small-stream courses, and contribution areas.

(*c*) Stabilization of main streams.

(*d*) Works controlling and utilizing runoff.

2. Urge mutual cooperation of all agencies in water-use and control programs with soil-conservation districts.

3. Recognize the development and participation in sound water-management plans as a district responsibility.

4. Recognize the interrelationship of the conservation problems involving water and the living resources.

5. Urge analysis of water-supply demands and a continuing inventory of available sources, both surface and ground.

In carrying forward the recommendations of the board of directors of the NASCD "that soil-conservation districts sponsor the formation of and cooperate closely with watershed associations jointly working out mutual problems and aiding in watershed development," this committee proposed that the NASCD form a permanent community watershed-management committee.

Duties of this committee would include:

1. Assembly of information
2. Watershed-program evaluation
3. Coordination of all groups interested in watershed management
4. Prevent duplication
5. Suggest the necessary legislation to promote effective community watershed management

Be it resolved by the NASCD that a rapid and complete upstream watershed program be carried out and that this program should precede or be concurrent to downstream development.

The NASCD encourages local soil-conservation districts to consider at an early date in their development the possibilities of the community watershed-management program.

As chairman of the community watersheds committee, I have had an opportunity to discuss community watershed development with members of soil-conservation district governing bodies, with farmers, and with representatives of urban interests, and almost without exception I have found a tremendous desire on the part of the people to find a way to make a contribution in the field of watershed development. The National Association of Soil Conservation Districts has encouraged the organization of local watershed groups, with the idea in mind that it would give an opportunity and a field where rural and urban people could work together in solving problems that were common to both of them: Soil and water conservation, flood-prevention and pollution control, drainage, irrigation, and other land and water-management problems. Many of these watershed associations, such as the Nishnabotna in Iowa, the Brandywine in Pennsylvania, the Waushita in Oklahoma, and the Salt-Wahoo in Nebraska, have done tremendously good jobs in encouraging local people to make every contribution that they could to the solution of their land and water-management problems.

After these local people have completed the conservation and flood-prevention works that are within their capabilities to finance, there will definitely be a field where they will need some assistance from the States and from the Federal Government. Some of the pioneering work in this field has been done in watersheds such as the Little Sioux in Iowa, the Waushita in Oklahoma, and others. These pilot procedures have proven in my opinion that it is feasible and practical for the Department of Agriculture, through the Flood Control Section of the Soil Conservation Service, to give additional assistance through the soil-conservation districts to individual farmers or groups of farmers who have soil conservation and soil and erosion problems affecting in most cases more than one farm that are beyond their own individual abilities insofar as financing proper treatment to prevent further flood and erosion losses.

Looking at the over-all flood-damage picture, far the greatest proportion, not the most dramatic of the losses, occurs on the farms and in the small watersheds in loss of top soil and crops by erosion, by overflow and by damage to local drainage districts. It is not my point at this time to argue the point of whether we should have big dams or small dams, but rather I would like to make that point that all of these things are part of the whole prevention picture, and all of these parts must have the proper treatment if we are to have a sound, constructive, long-time flood-prevention program. There has been a tendency in the last years for people to take sides, so to speak, or to aline themselves as being in favor of big dams or against big dams, without having a full realization of the great number of problems that we are confronted with in conserving the soil and water resources of our country and preventing flood damage to the agricultural as well as the urban areas.

It has been my experience that the surest way to get anyone to understand a problem is to get them to make some contribution toward the solution of this problem. There is a very good opportunity at this time, by giving a little encouragement and financial assistance to the various watersheds over the country to get a substantial number of our people actively interested in doing something about solving our various water-management problems.

I want to assure you that all of the facilities of the 2,000-odd Soil Conservation Districts of America are ready and willing to act as a local coordinating agency, either as individual districts, or in groups of districts. Districts are authorized to request and to receive assistance from local people, from local units of government, from State governments, from the Federal Government through the Department of Agriculture, and other agencies. Soil-conservation

districts and the Corps of Engineers have an opportunity in many areas to also work together. I am sure that you will find that all of these groups will work with the local soil-conservation districts much better than they would with what some of them feel are competing agencies.

Respectfully submitted.

DON ANDERSON,
Chairman, Community Watershed Committee
The National Association of Soil Conservation Districts.

COLEMAN, TEX., *May 9, 1952.*

Hon. ROBERT E. JONES,
Chairman, Subcommittee on Civil Works,
House Public Works Committee, Washington, D. C.

GENTLEMEN: We submit that the Congress has no greater responsibility than that of protecting and conserving our fundamental natural resources—our soil and water.

Since there are no new frontiers; on broad expanses of territory into which the rising tide of population increase can penetrate for the privilege of exercising its initiative; since the foundation of every phase of our national economy must depend upon the adequacy of soil and water, we ask the privilege of submitting to your honorable committee some statements for your consideration.

Although our representation is limited as compared to the magnitude of problems confronting you, we trust that you will consider the fact that the ultimate maximum advancement of our Republic depends upon the status of the multitude of communities, both large and small, and the individuals comprising them.

We would emphasize the fact that data herein submitted, although referring largely to local conditions, are applicable to vast areas of the United States. We would further emphasize that headwaters and tributary areas of river basins are of exceeding importance in the planning and development of rivers. Unfortunately, this phase of the problem has not generally received proper consideration.

In anticipation of your valued consideration, the report herein is respectfully submitted.

CENTRAL COLORADO RIVER AUTHORITY.
R. G. HOLLINGSWORTH, *Chairman.*
S. W. COOPER, *Secretary-Manager.*

THE PROBLEM

1. In submitting the matter herein, we conclude that your study of civil works for the improvement of our river systems for flood control, soil and water conservation and utilization, is for establishment of such policies and practices as may be of greatest public benefit.

2. The Central Colorado River Authority was created as a State agency by special act of the Texas Legislature for the purpose of control, storage, preservation, use, and distribution of the waters of the Colorado River and its tributaries within its district.

3. Extensive surveys revealed an astounding multiplicity of problems. No dependable water supply from wells, springs, or streams was available, and the surface water runoff was exceedingly erratic. The conditions varied from destructive flash floods causing loss of many lives and millions of dollars of property damage to complete lack of water for domestic, livestock, and public community needs. In one county, transportation of water for farm and ranch needs was costing $600 to $1,000 per day, and approximately $1,800 per day for municipal needs.

4. In the territory of the Central Colorado River Authority, urban and rural population, although united and persistently striving to overcome the chaotic conditions, were unable to meet the needs. The momentous import of the conditions induced a more extensive investigation in which the Federal Government assumed responsibility of surveys which were made by the Corps of Army Engineers and United States Department of Agriculture with State and local agencies cooperating.

5. Of fundamental importance to the proper control and utilization of waters of our river systems is a complete appraisal of the normal and floodwater

discharge of the entire watershed—beginning with the tributary areas which involve a greater cumulative economic loss to our national economy than on the major river stream. Seventy-six percent of total flood losses in this area is on our tributaries and more lives are lost in the flash floods of these streams than are lost on the main stem.

6. Unfortunately, factual data relating to upstream sections of our river basins are meager compared to the extended official records on the lower and main stem sections. One of the most important problems is the lack of comprehensive knowledge of the great variation of flood water runoff of different sections of our river watersheds and its contribution to and influence on major downstream floods.

7. However, we insist that, from records of Surface Water Supply of the United States, Western Gulf Basins and Climatological Data, it is proven that our major main stem river floods were produced from one or limited number of tributary areas. And reversely, chaotic conditions often prevail due to lack of water. We quote from authentic sources:

8. "On the eastern border of Texas the annual precipitation is as high as 56 inches annually; in the extreme western part of Trans-Pecos Texas it is as low as 7 inches." * * *

9. "Within the boundaries of Texas are found each of the three general classifications of North American weather. Along the Gulf Coast maritime weather prevails; in the extreme west, mountain weather; throughout the large intervening area, continental weather."

10. "Texas topographic and climatic conditions combine to make utilization of surface water difficult. The middle and upper courses of Texas rivers lie in a region of characteristic rapid and irregular precipitation. * * * Rainfall, especially in spring and summer, is usually from thunderstorms or the general rainstorms that come with the advance of cold fronts against the warm air currents from the Gulf, causing rapid precipitation. The rolling terrain causes rapid runoff. Discharge from the middle and upper segments is rapid. The consequence is quick disappearance of water from the uplands and flood in the lowlands."

11. "Although the combined average daily discharge of all Texas rivers is 74,740 second-feet, or 48,310,000,000 gallons per day, draughts reduce the flow of the majority of its streams to zero or useless quantities at times." * * * "All streams in 72 counties east of the 100 longitude (east border of the Panhandle) and 69 counties west of that meridian, at times, go dry or the flow reaches useless quantities." This emphasizes importance of flood control water storage and stream flow regulation on the headwaters.

12. Local rainstorms, common to the area, produce 200 to 300 acre-feet of floodwater runoff per square mile within a period of 24 hours. Example of known discharge of small creek stream being 187,000 second-feet peak flow from 778 square miles. Smaller areas producing much greater amount of runoff per square mile and higher peak flow. Official records from one watershed show a maximum annual discharge of 368 acre-feet per square mile against a minimum of 4 acre-feet per square mile annually. Dry periods extending as long as 4 or 5 years cause depletion of water supply, resulting in serious economic losses and general chaotic conditions.

THE MIDDLE COLORADO RIVER WATERSHED

13. This section of the Colorado River is composed of an area of 7,189 square miles (larger than combined area of Connecticut and Delaware). It includes the watersheds of Pecan Bayou, Brady Creek, San Saba River, and the area draining into the Colorado River between its confluence with the Concho River and mouth of Pecan Bayou.

14. A tributary flood control survey was made by the Department of Agriculture and is represented in House Document No. 270, Seventy-eighth Congress, first session, and the program was approved by the Congress—Public Law 534, Seventy-eighth Congress, second session. It was amended in the Eighty-first Congress, second session, to include structural measures on tributaries for flood control.

15. The middle Colorado River watershed program by the Department of Agriculture is 1 of 11 similar flood-control programs as authorized by the Congress.

16. According to report on survey of the area, 76 percent of the total flood damage is in tributary areas of the watershed. Destructive flash floods occurring

in some sections every year and more generally in periods of 10 to 15 years. Local thunderstorms covering from 100 to 500 square miles cause severe flooding on small tributaries. Frontal storms, also common in this part of the State, may cover one or more large tributary areas or a large portion of the middle Colorado watershed; result is severe flooding, not only in small tributary streams, but also in the main stems of the major tributaries of the Colorado River.

17. The estimated length of tributaries of the area is 1,200 miles with 224,747 acres in the flood plains. The flood plain of these tributaries ranges up to one mile or more in width and generally is the most productive agricultural area. This flooded area includes millions of dollars of investment in oil production, farm and ranch, municipal, public utilities, county and State highway improvements and extensive values in native pecan trees, wildlife and other natural resources. The estimated annual floodwater damage is over $3,500,000 and, from surveys and plans completed for detention structures and flood-control measures in more than 25 percent of the area, it is evident that the benefit to cost ratio ranges from 2.5 to 1 to 5.0 to 1. The installation of flood-control conservation structures on the upstream tributary areas will materially reduce flood problems on the main stem.

18. The headwaters and tributary flood control and stream-flow regulation benefits the entire water course. The floodwaters of the Colorado River at Austin, Tex., have carried as much as 2½ million tons of soil in a 24-hour period. One main stem reservoir silted up 46 percent in 6 years; another lost 90 percent of its capacity in 13 years.

19. We contend that to properly achieve control of floods is to reduce them from where they begin and make the civil-works program effective throughout the river basin.

SUMMATION AND RECOMMENDATION

Summation

20. The Middle Colorado River Basin report by the Department of Agriculture was received by the Congress in 1943 and was duly authorized for a program of flood control.

21. The total stream miles and flood plain of tributaries in the middle Colorado area is approximately 10 times greater than the middle section of the main stem.

22. The program is of great importance to the Nation's basic industry—the production for human needs; and to the welfare and progress of an area greater than the combined area of the States of Delaware and Connecticut.

23. Although the ratio of benefit to expenditure of public funds is much greater than is represented in some major river multipurpose projects requiring many millions of dollars, there has been only a small amount of funds made available for tributary improvement of the Middle Colorado area.

24. There has been only one flood-control conservation project constructed on one of the several larger tributaries in the middle Colorado watershed. It was completed by the Corps of Army Engineers in 1948. Value of such projects has already been proven by elimination of flood damage, regulation of stream flow, and greatly needed water supply. Actual value several hundred thousands dollars in less than 4 years.

25. The Department of Agriculture recently completed a flood-control conservation project on a smaller stream. It's value cannot be questioned due to previous flood damage.

26. We urgently appeal to you to weigh the imperative need for congressional consideration of civil work to include additional conservation and flood control in the upstream and tributary areas of the river basins, by providing for the essential retardation measures and detention-conservation dams on the main tributary and subtributary streams.

Recommendations

27. It is recommended that, of fundamental importance, a complete survey of the normal and flood water runoff of the entire watershed of each river system be made and that appraisal of economic values and justification for conservation and flood control be based upon:

(*a*) Agricultural, domestic, and municipal needs
(*b*) Industrial and mining
(*c*) Flood control, beginning at the source
(*d*) Irrigation

(*c*) Power (There is no substitute for water for (*a*), (*b*), (*c*), (*d*), but there is for hydroelectric power.)
(*f*) Navigation
(*g*) Wildlife and recreation

28. We recommend that due consideration be given to the phenominal accomplishments by the Corps of Engineers, in river and major tributary development, and that ample provisions be made for their program of civil works, and

29. That the Congress make provision for tributary conservation—flood control by the Department of Agriculture, as authorized for the middle Colorado watershed, and that ample appropriations be made to immediately advance construction of detention dams and other measures to assure adequate flood protection and provide local water supply for consumptive purposes.

30. We further recommend that the program of flood control and conservation of the Corps of Engineers and Department of Agriculture be so coordinated that the different phases of river development shall prove reciprocally advantageous.

31. In conclusion, since the proper control and utilization of soil and water resources is of equal importance to local, State, and national economic and social welfare, we recommend that full consideration be given to local and State interests in river-basin planning for development of the Federal civil-works program.

PRESENTED TO THE SPECIAL SUBCOMMITTEE TO STUDY CIVIL WORKS BY THE CITIZENS COMMITTEE TO OPPOSE THE MOUNT UPTON AND COPES CORNERS DAMS, SOUTH NEW BERLIN, N. Y.

Our committee was formed to study the proposal of the Army engineers to build a flood-control dam at Mount Upton, N. Y. In over 14 months of investigation some things were learned that might be helpful to the investigation and study of civil works.

1. In selecting a site for a reservoir engineering considerations were given a place of major importance without regard for agricultural resources. No agency of Government appeared on the scene to protect these resources: there were no checks or balances, except the local people.

2. Th main objective was to impound a huge amount of water; there was no consideration evident as to the impact of this proposal. (In this case the impact was two times greater than the alleged benefits.)

3. It follows that impact surveys should be required and it would be preferable that they be made by a separate agency of Government. Impact figures are as much a cost as other charges and it should be required that they be included in the computation of the cost-benefit ratio.

4. Since congressional authorization hinges on a favorable cost-benefit ratio, (the Flood Control Act of 1936) methods of arriving at benefits should be carefully scrutinized by Congress even though accepted formulas are used. In many cases the alleged benefits do not jibe with the facts.

5. Invariably first-cost estimates on projects are low requiring further requests for funds after authorization and partial construction. This is equivalent to circumvention of the cost-benefits requirements of the Flood Control Act of 1936. It is important that Congress get the true facts before authorization so that uneconomic projects are not approved. Provision should be provided, of course, for changes in the price level.

6. Where a project is under consideration all Government agencies should be totally free to submit proposals without any coercion so that the best and most economical program would be available. There is strong indication that the Army engineers are so powerful that they dominate the flood-control picture and thus make it difficult for the best solution of the problem in many cases.

7. In all problems involving excess water—the approach should be from the top—where the water falls in the watershed. Huge dams that are so damaging should not be a remedy of first resort. The cause of the trouble should be treated first rather than dealing with effects first. Watershed treatment is necessary regardless.

E. J. BECKERT, Jr., *Vice President.*

(Whereupon, at 1:15 p. m. the subcommittee adjourned until 10 a. m., Wednesday, May 14, 1952.)